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ECLECTIC REPERTORY

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ANALYTICAL REVIEW.

Vol. XI. JANUARY, 1821. No. I.

SELECTED PAPERS.

Observations on the Theory which ascribes Secretion to the Agency of Nerves. By W. P. Alison, M. D. F. R. S. E. *&c. Professor of Medical Jurisprudence and Medical Police in the University of Edinburgh.*

[From the Journal of Science and the Arts, Vol. IX.]

The importance of Dr. Wilson Philip's Experimental Inquiry into the Laws of the Vital Functions must be obvious to all who study, with the attention it deserves, his refutation of the theory of Le Gallois, concerning the connexion of the nervous system, in the living body, with muscular action, contained in a work which the French National Institute characterized as "certainly the most important which has appeared in physiology since the learned experiments of Haller," and the doctrines of which that learned body, somewhat hastily, sanctioned and adopted.

The most prevalent opinion in the schools of medicine, in regard to the connexion of the nervous system with muscular action, has been, that the muscles derive from the nerves, not merely occasions of irritation, but supplies of irritability, in the shape of nervous influence or energy. And the difference between the two sets of muscles, has been referred by some to the different parts of the nervous system, from which their respective portions of energy have been conceived to be derived. Thus Willis and Boerhaave derived the energy of the voluntary muscles from the brain, and of the involuntary from the cerebellum; Whytt and Cullen, that of both from the brain generally; Bichat, that of the former from the brain, and that of the latter from the ganglia of the sympathetic nerve; Le Gallois, that of the former set of muscles from the nerves immediately supplying them, and that of the latter from the spinal marrow; and, in some late French physiological works, reference is made to an opinion of Reil, which may perhaps be considered as the last hold of the doctrine of nervous energy, namely, that all muscles derive their irritability from the coats of the nerves immediately supplying them.

These opinions have led to much false reasoning in regard to the nature of various diseases; and therefore it is of the utmost importance to medical science, that we should be in possession of facts illustrating the true nature of the connexion between the nervous system, and the different muscular actions which constitute so important a part of all the functions of the living body. The experiments and observations of Dr. Wilson Philip on this subject, agree perfectly with those recorded by Haller, in his *Elements of Physiology*, and in his long controversy with Dr. Whytt, and appear to place beyond all doubt the general correctness of the doctrines which he taught in this fundamental department of physiology.

The following may be stated as the most important propositions which these physiologists have established.

1. "That the power of the muscles, both of voluntary and involuntary motion, is independent of the nervous system;" that is, that no muscle, voluntary or involuntary, derives any thing from the nervous system, which enables it to contract. And, therefore, that the term nervous influence or energy in this, the most common sense in which it is employed in physiological and medical writings, is absolutely without a meaning.

2. That many muscles are directly excited to contraction by causes acting on the nervous system. And,

3. That the contractile power of all muscles may be much and variously modified, and in some instances destroyed, by causes acting on the nervous system.*

---

* That changes in the nervous system affect muscular action in *both* these ways was distinctly pointed out by Haller, in the same paper in which he controverted the doctrine of the dependence of muscular irritability on nervous influence, although the French reporters on Le Gallois's work seem to have supposed that, according to him, changes in the nervous system can only act in one way upon muscles, *viz*. by directly stimulating them, and therefore that, in his apprehension, the nerves of the heart must have been absolutely useless. "Un jour," says he, "peutêtre, l' on reduira l' usage des nerfs, par rapport aux muscles, à leur porter, de quelque façon que la chose se fasse, l' im-

If these principles be correct, we see the necessity, in all investigations concerning the nervous system, of keeping steadily in view a principle which no train of reasoning is necessary to establish, but which has often escaped the attention of those engaged in such inquiries.

When a change is produced in any of the functions of the animal economy, by means of a change effected in the nervous system, two explanations of the fact immediately present themselves.

It may either be supposed, that the ordinary exercise of the function affected is dependant on some particular condition of the nervous system, and, of course suffers a change corresponding to that which the nervous system undergoes; or, without any such habitual dependence of the function affected on the nervous system, it may be supposed liable to change from changes in that system. The former supposition is perhaps the more obvious of the two; but there is nothing in the nature of things to prevent the latter from the being the true one, it being just as probable *a priori*, that muscular actions, or secretions, taking place independently of nerves, should be *liable to modification*, from changes produced in nerve, as that that power, so totally different from any possessed by nerves themselves, should be *dependant* on any influence which nerves can supply.

Unless, therefore, we have an *experimentum crusis*, to determine which of these explanations, in any particular case, is the true one, we are not entitled, from seeing an alteration, or even the cessation of any function of the animal economy, brought about by changes in the nervous system, to infer the dependance of that function, in ordinary circumstances, on any thing derived from the nerves.

Thus, Le Gallois was not entitled to conclude, from seeing

pression des volontés de l' ame, et á *augmenter cette tendance naturelle, que les fibres ont déjà par elles mêmes, à se contracter*."**

And again, " minime improbabile est, etiam cordi per nervos vim motricem accedere, quæ motum, *a natura irritabili* pendentem *fortiorem et celeriorem* efficiat."†† It is impossible to express more clearly that the muscular power of the heart although dependant only on its irritable nature, or as Dr. W. Philip expresses it, perhaps less correctly on its mechanism, is liable to increase, and we may add, to diminution, from causes acting on the nervous system. I apprehend, therefore, not only that Haller has not overlooked the use of the nerves of the heart, but that he has stated their use more correctly than any physiologist since his time.

The experiments of Dr. Philip have illustrated more fully than those

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** *Dissert. sur l'Irritabilité*, p. 52.

†† *Elem. Physiol.* Vol. I. p. 493. See also Vol. IV. p. 516.

the action of the heart stopped in his experiments, by sudden destruction of the spinal marrow, that the ordinary actions of the heart are dependant on, or its life derived from, the spinal marrow; because without making that supposition, we can suppose it subject to change, from changes in the condition of the spinal marrow. In that case an *experimentum crusis* in favour of the *latter* supposition was afforded, by the observation of Dr. Wilson Philip, that the *gradual* destruction of the spinal marrow, or its removal from the body is not attended with any such change on the action of the heart.

The principal stated above has been fully recognised by Dr. Wilson Philip, in reference to involuntary muscular action, but he seems to me to have overlooked it in his speculations on secretion and animal heat.

After having seen reason to think, that muscular irritability, although often influenced through the medium of nerves, is in no case dependant upon any influence derived from the nervous system, I think we may go a step farther in laying down the fundamental principles of this kind of inquiry.

Whatever other purposes the nervous system may be destined to serve in the animal economy, it seems obvious, that it is intended to serve as a medium of communication between mind and body, and that all the changes in the bodily functions which are observed to follow mental acts, are produced through its intervention.

It is generally agreed among physiologists, and I think it cannot be doubted, that some *physical change* is produced in the ner-

of any other physiologist these *two different modes*, in which changes in the nervous system affect muscular action. The general results of his observations, and of those of Haller, Bichat, and others on this subject, may be stated to be, that the *first* mode of action, that is, the direct excitation of muscular fibres to contraction by impressions made on the nervous system, is confined to the *voluntary* muscles; and that the *second* mode of action, that is, the alteration of the vital power, or tendency to contraction of muscular fibres by impressions made on the nervous system, is chiefly exerted on the *involuntary* muscles.

Dr. W. Philip had indeed recorded in the second chapter of the second part of his work, some very important experiments which he considers as proving that the heart may be directly stimulated by impressions made on the nervous system. But although the term stimulus was very naturally applied by him to the substances which quickened the action of the heart when applied to the brain or spinal marrow, yet various considerations might be stated to shew, that the effect of those substances is more correctly expressed by saying, not that they excited contractions of the muscular fibres of the heart, but that they increased the tendency of the muscular fibres of the heart, to contract from the stimulus of the blood.

vous system by every mental act which, through its intervention, influences any bodily function. If this be so, it may naturally be expected, that these changes in the nervous system may be readily *imitated* by the application of physical agents, which furnishes a ready explanation of the effect of such agents, applied to the nervous system, on the various functions. And, therefore, when any effect is observed in any function from the application of physical agents to the nervous system, analogous to the changes produced in the same function by mental acts or affections, instead of arguing from that fact, the necessary dependance of the function in question, on any influence derived from the nervous system, it seems more reasonable merely to suspect that those physical agents must have wrought a change on the nervous system, somewhat analogous to that, which these mental acts or affections had been wont to produce.

The opinion, that secretion is dependant on nervous influence or energy has been maintained by different authors; but the best arguments in favour of it are those which have been lately stated by Sir Everard Home,* Dr. Wollaston,† Mr. Brodie,‡ and Dr. Wilson Philip.§

Of these the most important is derived from the observations of the two last authors, on the effect of dividing the eighth pair of nerves, on the secretions of the stomach. Dr. Philip found, that no change takes place on food that has been recently taken into the stomach of rabbits, on which this operation is performed, even when they live twenty-six hours after the operation, implying that the gastric juice had not been secreted. This is confirmed by the observation of older experimenters, that in animals killed by the division of the eighth pair of nerves, the contents of the stomach are found putrid: the effect, I presume, of their remaining some time at the temperature of the internal parts of the body, without being acted on by a chemical solvent. (See *Haller*, *Experiences sur les parties sensibles et irritables*, No. 182 and 185.) And Mr. Brodie found that the ordinary effect of arsenic, to produce an increase of the mucous and watery secretions of the stomach and intestines, is prevented from taking place, by dividing, either those nerves in the neck, or the branches of them which supply the stomach on the lower part of œsophagus.|| From these experiments, these authors conclude, that the

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* *Philosophical Transactions* for 1809.

† *Philosophical Magazine* for 1809.

‡ *Philosophical Transactions* for 1814, p. 102.

§ *Expl. Inquiry* &c. p. 119, et seq.

He had previously found the secretion of urine to cease after the secretions of the stomach and other parts, are dependant on an influence derived from their nerves.

According to the principle above laid down, the facts just mentioned, although obviously susceptible of explanation in this manner, are not sufficient to justify this conclusion. Without supposing the secretions of the stomach to *depend* upon any thing derived from the nervous system, we may suppose them *liable to change*, or even to total annihilation, from *certain lesions* of that system. And although the kind of lesion which produces this effect on these secreting organs be different from that which stops the movements of the heart; yet as we are ignorant of the manner in which any lesion of the nervous system affects muscular action or secretion, we are not more entitled to conclude, that the secretions of the stomach depend on its nerves, from finding them stopped by the division of these nerves, than Le Gallois was, to conclude that the action of the heart depends on the spinal marrow, from finding it stopped, in his experiments, by crushing that organ.

If the conclusion in question does not necessarily follow from the experiments, we are justified in refusing our assent to it, without pointing out any other manner in which the results of these experiments may be explained. Different theories may perhaps be formed for this purpose, but there is one consideration that appears to me particularly deserving of notice. The eighth pair of nerves are generally regarded as those which are most concerned in the *sensations* of the stomach. Now it is pretty certain that different secretions are very dependant on certain sensations. No one can doubt of the effect of the sensation of grateful food in the mouth, upon the action of the salivary glands. I think it cannot be doubted, that dividing the nerves of the tongue and palates, and so paralysing the organ of taste, would greatly diminish the flow of saliva during the mastication of food; but we know that the salivary glands cannot derive any energy from these nerves, because they are supplied by other nerves. By dividing the eighth pair of nerves after an animal has taken food; the natural sensations which accompany and succeed the reception of food into the stomach are prevented from taking place and the painful sensations of dyspnœa and nausea are produced, and may not this be sufficient to explain the failure of secretion in the stomach? The same supposition, of diminution, or destruction of sensation, and of the substitution of sensations

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spinal cord is divided in the neck, or the head removed, both in rabbits and dogs; notwithstanding that the circulation is kept up by artificial respiration. See *Philosophical Transactions* for 1811.

of a different kind, may explain the want of any increased secretion from the action of the arsenic in Mr. Brodie's experiments.

When, therefore, Mr. Brodie concludes, from these experiments, that "the suppression of the secretions was to be attributed to the division of the nerves," and "that the secretions of the stomach and intestines are very much under the control of the nervous system," his inferences must command general assent. But when he hazards the farther conclusion, that "the secretion was prevented in consequence of the nervous influence having been interrupted," I would beg to ask, what is the precise meaning attached in this instance to the term nervous influence, and what proof there is of its having been interrupted?

If it be meant merely, that the nerves are prevented from performing their accustomed actions, in regard to secretion, we may object to the expression, because it seems to imply, that these actions are constant and essential to the effect, whereas it is very possible that they may be only occasional, and may modify, without assisting, the secreting actions.

If it be meant that some influence derived from the nervous system really essential to secretion is cut off by the operation, we may object to the conclusion, because the fact may be equally well explained by supposing the lesion of the nerves to communicate a noxious influence to the secreting organ, without intercepting a salutary one.

The other arguments in favour of the dependance of secretion on the nervous system, chiefly insisted on by the authors formerly mentioned, are these:

1. Changes in the blood, somewhat similar to those produced by secretion, particularly the coagulation of the albuminous and the separation of the saline part, may be produced by galvanism.
2. Galvanism is excited by the contact of the nerve and muscle of an animal recently dead, and a galvanic pile may be formed of alternate layers of nervous and muscular substance.
3. The action of nerves on muscles is similar to that which is exercised by galvanism on muscles.

From these facts it is concluded, that what has been called nervous influence or energy is in all cases galvanism, and from them, taken in connexion with the facts just noticed, of the cessation of secretion on the division of the nerves supplying certain secreting organs, a strong presumption is thought to arise, that secretion is owing to a galvanic action propagated along the nerves, and is to be numbered with the other well-known chemical effects of galvanism.

In regard to secretion, a still stronger argument in favour of this theory is adduced by Dr. Wilson Philip. He found, that when the secretion in the stomachs, either of rabbits or dogs, is suspended by cutting the eighth pair of nerves, it may be restored by applying galvanism, and the ordinary changes may be effected by the help of this agent, on the food previously taken into the stomach.

It is obvious, however, (*taken for granted that all sources of fallacy in these experiments were avoided*,) that even this fact admits very readily of a different explanation. It may be said that the secretion in the stomach does not depend on its nerves, but is liable to be influenced through them; that the shock of the division of the nerves acted as a powerful sedative, and suspended the secretion, but that the stimulus of the galvanism was sufficient to restore it.

It is obvious also, that if this last explanation be admitted, these experiments of Dr. Philip must be regarded as furnishing a decisive argument *against* the dependance of secretion upon the nervous system. For here we have the nervous influence cut off, and yet secretion going on. On the supposition that the nervous influence is really essential to secretion, this can only be explained by supposing the galvanic influence, which is substituted for it, to be really the same thing.

If therefore, we can make it probable, that the changes which occur in the nervous system are not galvanic actions, we need go no farther, after these experiments, in order to shew that the nervous system is not necessary to secretion.

But, on the other hand, even if we admit the galvanic nature of nervous actions,* it does not follow from these experiments that they are essential to secretion; for the effect of the galvanism, applied in these experiments of Dr. Philip, may be merely to counteract a noxious influence resulting from the division of the nerves, not to restore a salutary one.

I shall first state the considerations which seem to me to render it probable that the actions of nerves are not galvanic, and afterwards those which seem to me to shew, that even if nervous actions be galvanic, still they cannot be necessary to secretion.

I. It is not, of course, intended to deny, that a certain degree of galvanic action may be excited by the contact of nerve and muscle, or of nerve and gland; that these substances stand related to each other as the zinc and copper of a galvanic trough do. What is doubted is, not the presence of the cause assigned, but its adequacy both in degree of intensity, and in kind of agency, to the explanation of the phenomena, and that for the following reasons:

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* In this paper I use the term "nervous actions" as a short expression for those unknown changes in the nervous system, which are presumed to take place on various occasions in the living body, without presuming to offer an opinion as to the nature of these changes.

1. If the changes in the nerves, which precede the contraction of muscles irritated through their nerves, be of the nature of galvanism, and if it be by galvanising the muscles that all the stimuli applied to nerves excite these motions, we must suppose galvanism to be excited, from time to time, to an intense degree, in nerves and muscles, without the aid of any chemical agent, and without any change in the chemical constitutions of these parts taking place either during or after the evolution of the galvanism. Now it is quite clear, that in tracing the physical changes produced by mind on body upwards to their source, we must ultimately arrive at some physical change which is inexplicable; and this ultimate inexplicable change may just as well be of the nature of galvanism as of any other nature. I do not therefore urge it as an argument against nervous actions being galvanic, that we cannot understand how the *mind* should excite under these circumstances strong galvanic actions in the nerves. But the important fact is, that nervous actions may be very readily excited by various *physical* agents, which certainly have no effect whatever in exciting galvanism in any other apparatus. Farther, these actions may be excited in the nerves, long after their communication with the brain, (which is supposed on this theory to be the main source of galvanic energy,) is cut off; muscles being excited to contraction by stimuli applied to their nerves fifteen days at least, according to the observation of Haller after the division of these nerves above the point irritated.

If, indeed, it were ascertained as matter of fact, that the irritation of muscles through their nerves is always attended with a notable evolution of galvanism, though it might be very difficult to explain the fact, it would be fair to argue, that the galvanism, known to be evolved, was the cause of the contraction; but in the present state of our knowledge on the subject; there being no proof whatever, that more galvanism passes from nerve to muscle during the contraction produced by irritation than at any another time, it seems to me fully as probable that muscles should be so constituted as to contract in consequence of imperceptible changes, not galvanic, communicated to them by their nerves, as that galvanism should be excited to a most intense degree in nerves, merely by bruising them with a probe, or pricking them with a pin, particularly after their communication with the source whence they are supposed to draw their galvanism is cut off.

2. The effects which are produced upon muscles by changes in the nervous system, are much more various than those which have ever been observed to result from galvanism. Stimuli applied to the nerves supplying the voluntary muscles, excite them very readily to contraction, but I believe no physiologist has ever succeeded in exciting the involuntary muscles to contraction, by applying stimuli to their nerves. Galvanism applied to either set of muscles directly excites them with nearly equal facility. Alcohol applied to the brain augments the irritability of the heart; an infusion of tobacco applied to the brain diminishes it. We may admit that galvanism is a power capable of producing both these kinds of effect on muscular organs, according as it is applied in a greater or less degree of intensity; but have we any reason to suppose, either that these two substances, acting on nervous matter, can excite galvanism at all, or that they can excite it in so very various degrees of intensity?

These considerations seem sufficient to shew, that we cannot suppose the action of nerves on muscles to be of the nature of galvanism, without supposing a much greater variety in the modes of exciting galvanism, and in its effects on muscular organs, than any observations on this power entitle us to assume.

3. If we suppose, with the authors of the galvanic theory of nervous actions, that these actions are essentially concerned in secretion, a strong argument against their identity with galvanism arises from the fact, that the various secreted fluids are so different from each other. This difficulty increases greatly, when we take into account the nutrition of all the different textures in the body, a process which Haller has well characterized as "omnium amplissima secretio." If there be powers in the animal economy distinct from galvanism, which are sufficient for the formation of the *solids* of the animal body, out of the blood, it is quite obvious that these powers must be amply sufficient for the formation of the secreted *fluids* out of the blood, and it is therefore quite unnecessary to suppose galvanism concerned in this last process. But if we regard both secretion and nutrition as dependant on galvanism, transmitted through the nerves, and refer to this cause the formation of all animal substances, from bone to serum, out of the blood, then, I think, we must make one of two suppositions. Either we must suppose the galvanism transmitted by the nerves to the various parts of the body, to be different in its nature in different places; or we must suppose the blood to undergo very various preparation in the different parts of the body, before it is submitted to the action of the galvanism.

In the former case, our explanation is contradicted by all that we know of galvanism, there being nothing to make us suppose that the blood can be differently affected by galvanism passing through two different sets of nerves; and certainly nothing that we know in the structure or composition of the different nerves, induces us to suppose that the nature of the galvanism sent through them can be different.

In the latter case our explanation only begins where the real difficulty ends. If there be power in the animal system sufficient to prepare the blood so variously, that one chemical agent thereafter operating on it, shall form out of it bone, muscle, tendon, oil, and serum, those powers must surely be adequate to the formation of these different substances without farther help; or at least it is to those powers, and not to the agent subsequently applied, that by much the greater share of the phenomena of nutrition and secretion must be ascribed.

It may be said, that although we have no proof of galvanism being excited in nerves by the application of stimuli, to such a degree as can explain the irritation of muscles through nerves; and have no proof of galvanism being so different in different situations, as to be capable of producing effects so different from each other as the formation of bone and of serum out of the same blood,—still all this may be true of galvanism; and we know so little of that power, that we are not entitled to lay down the limits, either of its developement or its action. To this I would answer, that it will be time enough to regard galvanism as identical with nervous actions, when it shall be proved, that it may be excited by as various means, and may produce as various effects.

To explain a set of phenomena in nature, is to establish their coincidence with another set of phenomena more general and better known. How then can we be said to explain the phenomena of the nervous system by resolving them into the phenomena of galvanism, when it is only by a hypothetical extension of these last phenomena, that they can be made to include the former, and when it is only in consequence of our ignorance of their real nature and limits, that we can venture upon this hypothetical extension?

4. Another circumstance which seems to me very adverse to the supposition, that division of the eigth pair of nerves, and division of any nerve supplying a voluntary muscle, act on the secretions of the stomach and the motions of the muscle, equally by cutting off a supply of galvanism, is this, that no secretion at all takes place after the former operation, whereas powerful muscular contractions may be excited by applying stimuli to the

nerve below the point of division long after the latter. According to the galvanic theory, these contractions are excited by galvanism remaining in the nerve after its division.* Why, then, does not galvanism enough remain in the nerves of the stomach after the division of the eighth pair, to carry on digestion for a certain length of time?

These considerations seem to render it extremely doubtful whether the changes which take place in the nervous system and affect the muscular or secreting organs, or the nervous actions, can be of the nature of galvanism; and if they be not galvanic, Dr. Wilson Philip's experiment above referred to, becomes an *Experimentum Crusis* against their being essential to secretion.

But, even if the actions of nerves be galvanic, there are very strong reasons for thinking that they cannot be essential to secretion and nutrition.

1. The secretion of the stomach was found to be suppressed, in Dr. W. Philip's experiments, by other lesions of the nervous system besides cutting the eighth pair of nerves. It was suppressed in rabbits nearly or entirely by destroying the lower half, or even less than the lower half, of the spinal marrow. (See Expts. 58, 59, 60, p. 171.) In these cases the stomach must still have had the supply of galvanism which it receives through the eighth pair of nerves, and in fact all that it receives from the brain and upper half of the spinal marrow, a much greater supply than that, the interception of which in the former experiments was supposed to stop the secretion. Where we find so great an effect produced on the secretion of the stomach by a cause which, even on the supposition of its deriving galvanism, through its nerves, from the brain and spinal marrow, can only have intercepted a small portion of that galvanism, it is surely reasonable to suspect, that the effect is to be explained on other principles than the interception of galvanism or of any other influence essential to secretion derived from the nerves.

It is likewise particularly worthy of notice, that the secretion of urine, although it was found to be destroyed, in Mr. Brodie's experiments, by division of the spinal marrow at its upper part, was not affected in these experiments of Dr. Philip, by the destruction of the lower half of that organ. I believe it will be allowed, that the kidneys have at least as much communication with the spinal marrow by their nerves as the stomach has: and therefore, when we find the secretion of the stomach suppressed by an injury of that organ, which does not affect the secretion at the kidneys, it seems fair to presume, that it is not by intercepting an influence *essential to secretion* that the injury produces the former effect.

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* See Haller, *Mem. sur les Parties Sensibles et Irritables*, Exp. 201, 202; 214, 220,—225, and p. 237.

2 This suspicion must become much stronger when these cases of suppression of the secretion of the stomach, from the destruction of part of the spinal marrow, are contrasted with the cases, of which there are many on record, of destruction of large portions of the brain, which is supposed in this theory to be the main source of nervous influence, without any affection of the functions of secretion and nutrition. For an enumeration of cases of this kind I refer to the review of Sir Everard Home's late paper on the functions of the brain in Vol. XXIV. of the *Edinburgh Review.* When we find the secretions of the stomach nearly destroyed by sudden destruction of a part of the spinal marrow, and not at all affected by gradual destruction of nearly the whole brain, we surely cannot consider the former cause to operate merely by cutting off a supply of nervous influence coming from the brain and spinal marrow, but must regard it as more probably on the same footing, with regard to secretion, as the destruction of the spinal marrow in Le Gallois's experiments, with regard to circulation, on which Dr. Philip himself has so judiciously commented; that is, as exemplifying, not a continual and essential agency of changes in the nervous system upon the function of secretion, but an occasional and controlling agency.

3. But what appears to me to remove all doubt upon this subject is the class of facts (very candidly acknowledged, but I think not duly weighed, by Dr Philip,—*Experimental Inquiry*, *&c.* p. 240,) in regard to secretion and nutrition taking place where nervous influence cannot be supposed to operate; in vegetables, in the animals in which no nervous system has been discovered, in the chick *in ovo* before any vestige of the brain and spinal marrow can be traced, in the early part of the existence of the human fœtus when the brain and nerves appear incapable of performing their functions,—but most of all, in the cases, which are reported on unquestionable authority, of fœtuses born alive without either brain or spinal marrow.

Dr. Philip gets over this difficulty by supposing that there may be some other apparatus, in all these cases, by which galvanism may be applied to the blood, and which may therefore supply the place of the nervous system. But this is obviously supporting one hypothesis by means of another and a much bolder one. That galvanism is at all concerned in secretion or nutrition is a hypothesis which rests fundamentally upon two suppositions, that galvanism is identical with nervous influence, and that nervous influence is essential to secretion. If we put nervous influence out of the question, we have no better evidence of galvanism being at all concerned in secretion than merely this, that it produces chemical effects on the blood, and in particular coagulates its albumen, effects which are equally produced by caloric and various other chemical agents, and which never can be considered as amounting to a proof of secretion depending upon galvanism. When, therefore, we adduce even a single instance of secretion taking place independently of any influence that can be derived from the nervous system, we cut away at once the very foundation of the hypothesis which attributes secretion to galvanism; and although the hypothetical explanation of such instances, by galvanism supposed to be drawn from another source, given by Dr. Philip, may possibly, in the progress of knowledge, turn out to be correct, yet I think we may say with confidence, that in the present state of our knowledge it is not philosophical. The proper conclusion from the examples of secretion and nutrition going on independently of nervous influence should have been, not to suggest an additional hypothesis that another influence equivalent to that of nerves may be applied, but to invalidate the hypothesis formerly entertained, that nervous influence is essential to secretion.

Abstracting from the rare occurrence of the fœtus without either brain or spinal marrow, the *fœtus acephalus*, of which many examples are recorded, appears a sufficient answer to the conclusion drawn from the experiments both of Dr. Philip and Mr. Brodie. In the child of whom we have an account by Mr. Lawrence in his paper in the *Medico-Chirurgical Transactions*, Vol. V. p. 165, there was neither brain nor cerebellum. This child lived four days, and the secretions from its stomach, bowels, and kidneys, seem to have been quite natural. Surely this is sufficient to shew that the division of the eighth pair of nerves, and of the spinal marrow in the neck, which stopped the secretions of gastric juice, and of urine in those experiments, could not have acted by cutting off an influence, essential to secretion, coming from the brain.

4. If any farther proof be required, that the conclusion drawn from the experiments of Mr. Brodie and Dr. Philip of an influence derived from the nervous system being essential to secretion, is not warranted by the facts already known on the subject,—I think it is afforded, as has been already stated by Mr. Lawrence in the paper above referred to, p. 223, by the experiments of these authors themselves. In animals in which the eighth pair of nerves is divided, the bronchiæ and air-cells of the lungs are always found, as Dr. Philip expresses it, "clogged with a frothy mucus,"

which prevents the lungs from collapsing when the thorax is opened after death, and which, by preventing the application of air to the blood in the lungs, appears, from the observations of Dr. Philip, Le Gallois, and others, to be the immediate cause of the death that succeeds that operation.

Now this frothy mucus, found not only in the air-cells, but in the bronchia, in a quantity so much greater than natural, as to be the cause of death,—what is it but a secretion? If it be denied that the fluid which is effused on the membrane lining the bronchia and air-cells be a secretion, it is not worth while to dispute about the word; but it appears to me obvious, that it is a formation from the blood, so much akin to the formation of the stomachic juice that the two must depend upon the same principles. And when we find, in the experiments in question, that the division of the eighth pair of nerves, which supply equally the lungs and the stomach, diminishes or destroys the production of the one of these fluids, and increases that of the other, it is surely preposterous to conclude, that these experiments demonstrate the necessity of an influence, derived from the nerves to secretion in general.

There is a series of experiments by Mr. Brodie, (*Philosophical Transactions* for 1812, p. 378,) intended to prove, that in an animal which has been either killed by decapitation, or stupified by poison, in such a manner as apparently to suspend all the functions of the nervous system, the evolution of carbon still goes on at the lungs, to an equal extent as in a healthy animal, when artificial respiration is employed. To this evolution of carbon, Mr. Ellis has given the name of secretion; and although I do not pretend to decide whether that name is applied with perfect propriety in this instance, I take leave to observe, that this process, thus proved to go on notwithstanding the division, or destruction of the functions of the nerves supplying the organ concerned in it, is considered by that distinguished physiologist so nearly akin to secretion as to deserve the same name. Its continuance, therefore, even independently of the increase of the formation of mucus, in these circumstances, must be regarded as a very strong argument against the dependance of secretion on nervous influence.

Having thus considered the different arguments in favour of the supposition of that dependance, I think we may fairly say not only that there is no proof of it in the writings of physiologists, but that there is strong evidence against it. I need hardly add, that if we suppose the nervous system to be destined to exercise over secretion as well as over muscular motion, *not an uniform and* *essential* but an *occasional and controlling influence*, and that particularly when itself is affected by mental acts or emotions, we shall be at no loss in explaining the phenomena which have been thought to denote the dependance of secretion on the nervous system. The secretions of the stomach in particular, are so notoriously under the control of various affections of the mind, (acting on them, in all probability, through the medium of its nerves,) that it cannot appear surprising, that they should be very much deranged by division of these nerves.

Dr. W. Philip's opinion, in regard to the connexion of the nervous system in the living body with muscular action, which appears to me to be perfectly correct, may be thus stated; That when the nervous system, is itself impressed by various agents, mental and physical, it is capable either of exciting or of variously modifying the actions of all the different moving solids of the body; but that, when not itself impressed by any of these agents, it appears from all that we yet know on the subject, to be absolutely passive and inert in regard to all these moving solids.

The considerations which I have now stated appear to me sufficient to shew, that the same conclusion may be extended to the connexion of the nervous system in the living body with secretion; and in another paper I shall endeavour to shew that we have good grounds for forming the same conclusion in regard to its connexion with animal heat.

Some Remarks on certain Modifications as well as Modes of Treatment of Spinal Affections. By J. K. Walker, M. D., of Caius College, Cambridge, and Senior Physician to the Huddersfield Dispensary.

[From the London Medical Repository for Sept. 1820.]

The recently awakened attention of the Profession to spinal pathology, and the enthusiasm with which this subject has been lately prosecuted, added to the mass of conflicting evidence relative to the diseases of this part, have induced me to seek every opportunity of drawing from that legitimate fountain of medical improvement, the morbid anatomy of its structure, such solid testimony as we usually give when exploring the maladies of other parts, and which no other mode of investigation can so effectually supply. Few of our countrymen, who have lent themselves to this interesting department of medical science, have superadded to the fruit of their inquiries the corroborative evidence of *post* *mortem* examinations. To the credit of the continental writers be it spoken, they have applied themselves with assiduity to this source of information. Frank, Portal, Ludwig, and some others, have enriched our art with many important facts, solely from a more frequent inspection of the spine in its diseased state. Some of these physiologists, indeed, have carried their speculations so far as to ascribe a variety of spasmodic diseases solely to the morbid agency of this part, or of the nerves transmitted from the medulla spinalis to the seat of the disease. It is probable that the theory of these writers, which ascribes many of those painful affections of the back and loins which accompany hæmorrhoids, menstrual, and other obscure affections of the thorax and abdomen, to a supposed irritation at the origin of the various spinal nerves, is not altogether groundless. They have made it very probable, from dissections, that considerable turgidity of the vessels of the spinal chord exists in many of these cases; and this local congestion they have termed "plethora spinalis." With regard to the ascription of chorea*, tetanus, epilepsy, colica pictonum, &c. to a similar cause, (a position broached by many foreign Physicians,) so long as we meet with dissections of these cases without any such appearances in the spine, and others with evident marks of injury of the brain *alone*, it is illogical and absurd to draw such sweeping inferences, unless we are prepared to maintain, that the medulla spinalis has a more important influence in the animal machine than the encephalon itself, or that when diseased it is more alarming in its consequences than even a similar malady of the brain. Indeed, such affections will often come to be synchronous; so that it shall not always be easy to decide in which the affection first began; but the keenest advocates of spinal influence will hardly assert such influence to be paramount even to the sensorium itself. Next to the reveries of a Gall and a Spurzheim, this, indeed, would be the most preposterous.

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* We continue to receive strong evidence, from dissection, of the frequent connexion of this disease with medullary inflammation of the spine. I have perused few more striking exemplifications of this than in a case of tetanus, communicated to me by my friend, Dr. Freer, of Leicester, who, I trust, will be induced to give it that publicity which the interesting nature of the case, as well as its able treatment, deserves. It appeared, on examining the spinal chord, that the dura mater of the medulla spinalis had been affected with intense inflammation in its whole extent, it appearing of a chocolate colour, similar to contusion, but more especially so in the region of the upper cervical, of the fifth dorsal, and the lower lumbar vertebræ. The pia mater was similarly affected; but the distended vessels were more distinct and tortuous.

I hope it will hereafter be in my power to furnish other dissections of this part of greater interest. The one I shall now relate is the appearance of the spine, on dissection, of a fatal case of lumbar abscess, which had been considered and treated in its incipient stage as a mere case of lumbago, with the use of liniments alone, until the tumor in the thigh gave unequivocal indications of the existence of psoas abscess, which was the period, indeed, when it first became an object of my treatment. The origin of the psoas muscles, from the sides of the upper vertebræ lumborum, and from the roots of their transverse processes, would induce us, *a priori*, to suppose that any serious detriment in the spinal canal of that part might communicate itself to the contiguous muscles; but in the case here recorded, not only three of the lumbar vertebræ were partially carious, but traces of inflammation in the membranes of the chord itself, with a slight effusion, also were discernable. The history of this case would occupy more space than my readers might think warrantable; but enough, I think, is here stated, to prove the necessity of attention to the early manifestations of this disease. It is not contended, that the most energetic practice would ultimately have arrested this formidable malady; but it is plain, that in a part so sensitive as the spine, a timid temporizing treatment is to the last degree pernicious. If, however, such an oversight occur occasionally, it is equally true, that a simple case of lumbago has been dignified in its turn into a spinal affection; and so prevalent, indeed, is the spinomania (if I may so term it) in some places, that the slightest pain in the vicinity of the vertebræ is proof enough with many of disease in that part; and what was, in fact, no more than an ordinary case of chronic rheumatism, has been met with all the active treatment of a genuine spinal disease, and perhaps incarceration in the recumbent posture for many months. One consequence of this indiscriminate and indiscreet practice is, that it has given birth to some curious empiricism; and it will hardly excite surprise, when the reader is told that other pseudo cases like these, readily removed by friction have been quoted as instances of cures of diseased spine, without any of the ordinary resources, (such as leeches, blisters, caustics, or confinement,) and that a linament is all that is necessary for the removal of inflammation in the spine, which in less important and less sensible parts requires the aid of the most active remedies to remove. Do I contend, then, for the impropriety of such application in every stage of spinal disease? Assuredly not; no more than I should dispute the propriety of a liniment to a swelling of the knee joint, after every symptom of inflammation was removed: but what should we think of the judgment of that Practitioner, who, with evidence of a deep-seated inflammation in that part, should neglect the use of leeches, &c. for the sake of a favourite liniment? None but those who are aware of the insidious nature of spinal disease in its nascent state, and the subsequent ravages which often ensue on a neglect of its early manifestations, can properly appreciate the consequences of oversight in this particular. That Practitioner will be deceived, who expects invariably to find altered structure of the spine as a necessary condition of a disease there. Tumours and effusions may exist so as to cause compression on the medulla spinalis, and yet no inequality or deviation be manifest to the eye or the touch. We have examples on record of idiopathic active inflammation of the spinal chord (as appeared on dissection), without any disease of the brain, and without any distortion, where pain in the peccant part was almost the sole clue to the affection. We have equally well attested instances of dissection, where the disease occurred under the form of chronic inflammation, of which three cases are related by Brera*. In the first of these the spinal marrow was soft and flaccid, and partially suppurated, and its investing membranes covered by a puriform fluid. In the second, the cord itself was suppurated. Its investing membranes and the periosteum lining the vertebral canal were partially destroyed, *but the vertebræ and their ligaments were sound.* If the constitutional symptoms which accompany this affection of the medulla spinalis were more uniform, less danger might exist of its being overlooked; but so mutable and uncertain are they, that there are scarcely two patients that present the same routine of symptoms; and if they come to be cotemporaneous, and complicated with other affections, the difficulty of diagnosis is still greater. Wherever, therefore, the state of the pulse and pain in the spinal region create any suspicion of this latent malady, it has always been my practice to apply and repeat the leeches, until a mitigation takes place in those symptoms. But it is probable that the number of cases of spino-medullary inflammation is small, when compared with those where the inflammation involves the substance of the vertebræ, or their intermediate cartilages and ligaments. The nature of this affection is now so generally understood by the Profession, and the symptoms which are supposed to accompany it, have occupied the pen of so many foreign as well as writers of our own country, that the difficulty is to extract what is valuable, and, amidst so many glittering materials, to select the real metal from the base. It appears, from the various dissections of several of those patients who died under this disease, whose spines were curved in various degrees, and whose limbs were paralytic, that in infants and children, and in those who had been afflicted but a short time, the ligaments connecting the vertebræ, which formed the curve, were slightly thickened, and the cartileges between the bodies of the vertebræ much compressed; but in others, who had so long laboured under this disease as to have been destroyed by it, or by its consequences, the corpora vortebrarum were carious, the interjacent cartilages being totally destroyed. Whatever other symptoms accompany this morbid state of the vertebral column, (*and there is scarcely a viscus in the human body that has not been affected by it*,) the tendency to caries is evidently the first thing to be obviated—neglect this, and the effect will be distortion, or anchylosis, with the probable destruction of the general health of the patient for life. It will occasionally happen that the most skilful and energetic treatment is insufficient entirely to arrest this disorder, especially if it be combined with a scrofulous diathesis*; a combination, though not infrequent, yet not a necessary concomitant, as some have contended. Here the maxim "principiis obsta" is peculiarly appropriate; and if there be any truth in the position, that the primary cause of the caries and all its attendant consequences resides in the spine itself, it will readily be conceded that early topical applications, which may abate the tendency to inflammation, are indicated. I have had ample opportunities of witnessing the beneficial effect of this treatment, and the almost invariable relief from the application of leeches to the suspected part. It is much to be regretted that in all doubtful cases this expedient is not adopted, which in painful affections, whether of the spine or only of the contiguous muscles, is almost always productive of benefit, *and may prevent a caries and probable disorganization of the vertebræ.* The number of carious spines is not likely to be diminished while the contrary practice is followed; and, as I have before observed, if the use of liniments, or any other inert practice, is allowed to supersede this timely vigour, many a credulous patient may live to rue, when it is too late, the loss of stature and of health. While, however, I have to lament that any delusion should have existed as to the real nature of the disease I am now discussing, I am gratified to find that almost every practitioner of real merit has come to the same conclusion, as to the utility of issues, aided *occasionally* by the recumbent posture, which of course, will vary in duration, in proportion to the extent of the affection. Steel stays, swings, screw chairs, &c. have all been tried; but experience has now shown that much judgment is requisite in their employment, to prevent them from exasperating the affection. Those who have acquired the greatest celebrity in the invention and employment of machinery to throw the weight of the superincumbent column upon the pelvis, have found it necessary to premise in some instances active local applications. Mr. Cheshire, of Hinkley, would never have gained the high reputation he now enjoys for the treatment of spinal cases, if he had blindly applied his excellent apparatus for the support of the spine, without ascertaining, in the first place, whether there was not some local inflammation to be removed—some symptom which demanded active medical treatment. I should conceive, that where the intervertebral substance is destroyed, the anchylosing process would be retarded by a separation of the approximating surfaces of the adjacent bones. I have hitherto called the reader's attention to those cases where more or less pain in the spinal column indicated the presence of active symptoms; and I trust I have shown the fallacy of that treatment, which, where inflammation exists, is worse than frivolous—*I mean the premature use of liniments.* There is, however, a class of cases which may be materially benefited by them, and which, to an unprofessional examiner, or even to a prejudiced Practitioner, might pass for spinal diseases. I think I shall be borne out by the experience of those who have been much in the habit of examining the vertebral column, that there occasionally occurs in the dorsal portion a very discernable lateral inflexion, of which the convex portion inclines to the right, without *the slightest pain* on examination. This, however, I have observed oftenest in children, where there is unusual delicacy of habit; and I am confirmed in this opinion by a similar remark made by Professor Hufeland of Berlin, who states also, that he has recommended, with great success, the occasional bathing of the spine of children so affected with some spirituous lotion, or even common brandy. This constitutional debility, let it be remembered, may create a similar appearance in more advanced age, or it may be the consequence of some original malconformation. I am ready to admit, however, if there is any supervening declension of the general health, the vigilance of the Practitioner cannot be too soon directed to that part. Every one is aware, during the period of dentition, how many anomalous symptoms arise in children; how very flexible is their spine, and how often does it assume an appearance of deformity, so as to excite an alarm, and even sometimes to deceive the Practitioner. In some perhaps, from bad nursing, a slight tendency to deviation may arise, so as to call for the greatest vigilance to establish the rectitude of the vertebral column, yet no tenderness may be present*. Those who reason on the omnipotence of the spine to produce disease, seem to forget that there is also such a thing as muscular power concerned in maintaining the erect posture of the body, and that if any cause exists, which has impaired the integrity of such muscular power, the patient may not be always able to sustain the perpendicular position, and may acquire a habit of leaning in one direction, so as to give a fallacious appearance to a superficial examiner. Whenever, however, such a patient, on assuming the recumbent posture, becomes perfectly *straight, and free from pain on pressure*, it is absurd to designate such a case a spinal affection. Such a case *might possibly be relieved by liniments*, or by the use of the emplast. roborans; yet we should not be warranted in pretending that these remedies were a cure for diseased spine. Where, however, a tendency to become awry is observed, the avoidance of too long continuation in the erect attitude, and the adoption of the recumbent posture for an hour or two in the middle of the day, for several months, furnish the best mode of arresting any incipient deformity. It is well known, that young persons are taller sometimes by half an inch in a morning than at night, which arises solely from a removal of pressure upon the spinal column; and by analogy, as well as by experience, we are sure that such an expedient will relieve, and frequently remove any tendency to deviation, especially in growing children, where the bones are softer than usual. Of course, if any one of the vertebræ protuberate,* and become tender, additional means will be required, such as I have above alluded to. I have been induced to transmit these cursory remarks, because, obvious as they may appear, they cannot be superfluous, while such indefinite notions and such inconsistent practice are still persevered in. The history of medicine, unhappily, affords us too many instances where favourite medicines have been extolled as specifics in one generation, and shortly consigned to oblivion the next; not, indeed, because they were not useful remedies, but because they did not equal the splendid expectations which their sanguine discoverers attached to them. Our age will have the credit of bringing to light many important facts relating to spinal pathology; but it depends upon ourselves to stamp perpetuity upon these discoveries. The overweening fondness of a parent has destroyed many a child; nor can the many valuable materials, elicited from this mine of medical knowledge, save us from the derision of posterity, if we content ourselves with the glittering materials which lie on the surface, too idle to explore the massy and more valuable materials that lie below. My concluding sentence I extract from Baglivi—" Ars medicinæ necessario conjecturalis est; non nihil autem hujus incertitudinis et inconstantiæ preposteris argumentandi speculandique modis attribuendum est: nec mirum est, si, neglectâ verâ sede et veluti fomite morbi, falsas inde deducant conclusiones, et curationes talibus innixæ conclusionibus ex voto non respondeant."

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*The same author quotes instances of induration and of extravasated blood within the spinal chord, where the vertebræ were sound: and a case of paraplegia is related by Copeland, where, on dissection, no disease could be observed in the vertebræ; but within the lower dorsal and first lumbar, the spinal marrow was entirely wanting for more than two inches,

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* In many instances, it is true, strumous tubercles in the lungs, and a distempered state of some of the abdominal viscera, have been found to co-exist with spinal disease. Mr. J. Delpech (vide *Précis Elémentaire des Maladies Reportées Chirurgicales*,) thinks that those small spherical tubercles, which, when situated in the lungs, are one of the causes of consumption, may and do exist in the tissue of muscles, tendons, ligaments, and even in the substance of bones. He supposes that on attentive examination these scrofulous tubercles will be detected on the surfaces of these bones, or in the very centre of the osseous substance. At different periods of the disease he has found tubercles situate at various depths, in the long tissue, and in the surrounding soft parts. He has observed them at different periods after their formation, and in different stages of the disease, the cavities in the diseased bones still containing the pulpy matter, into which the tubercles are converted when they change their form and consistence; but even on the supposition that the formation of tubercles takes place in scrofulous subjects, independent of original inflammation, *yet, as foreign bodies, they are liable to produce inflammation of the parts in contact with them.*

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*If the cause which is ordinarily assigned for the more frequent prevalence of curvature to the right side is founded in truth, viz. the more frequent use that we are in the habit of making of the right arm, be not erroneous, the caution sometimes given to children to use their right hand rather than the left is evidently incorrect.

[We shall be excused for soliciting the attention of our young readers especially to the intimations and cautions contained in this valuable paper.—Ed.]

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* May not a protuberance of the spine arise occasionally from defective nutrition of the bones, or perhaps from a want of due secretion of phosphate of lime? A medical friend of mine acquaints me, that he is in the habit of administering phosphate of lime internally in analogous cases, where he suspects osseous innutrition, not without seeming benefit. Whatever strengthens the constitution, is certainly of service; and particularly cold bathing, provided that, in adjusting the temperature, due attention be paid to the season of the year, habits and strength of the patient, &c.

Some observations on a mode of performing operations on Irritable patients, with a case where the practice was successfully employed. By James Wardrop, Esq. Surgeon extraordinary to the Prince Regent.

[From the Medico Chirurgical Transactions, Vol. VII.]

It is not uncommon to meet with persons who have diseases which can only be relieved by an operation, but whose minds are so irritable, that although convinced of the propriety of such a measure, yet when about to submit to it, their courage fails, and they wrest themselves from the hands of the surgeon and his assistants by a convulsive effort.

A difficulty, from another cause, occurs in infants and children, when an operation is to be performed in which any particular mechanical neatness or dexterity is necessary. The difficulty in this case can generally be overcome, by inclosing all the body, excepting the part to be operated on, either in a bag or wooden box.

But patients of the former description are not so easily managed, and examples are by no means rare, where persons have suffered severe distress or even died, from diseases which they were convinced might have been relieved by a surgical operation. I remember an officer with a tumor at the angle of the lower jaw, which he himself was anxious to have removed, but when the knife was about to touch the skin, his courage failed him. After three or four unsuccessful efforts of this kind, he determined to allow himself to be tied "hand and foot," which, after having been accomplished with some difficulty, the incision was begun, and he then became tranquil, and the operation was easily finished. But by many, a process like this would never be submitted to; and I have heard patients who had been operated on for the stone, declare, that the binding of the hands and feet was by far the most distressing part of the operation.

It therefore still remains a great desideratum in surgery, to contrive a mode by which patients of the description alluded to, can be induced to submit to operations, and, as the practice which I have adopted in the following case may be applicable under similar circumstances, it may be worth while briefly to relate it to the Society.

A young woman of a robust form had a tumor on the orbitar plate of the left frontal bone, the base of which adhered firmly to the bone, whilst the exterior portion was attached to the integuments, in which their was a small sinus leading into the interior of the tumor. The diseased mass did not exceed the bulk of an almond, but it was attended with great pain, and even cautiously touching the orifice of the sinus with a probe, excited violent irritation. A tumor had been extirpated from the seat of this swelling, some months previously, a portion of which adhering to the bone being left behind, gave origin to this new growth.

Though she had come from a distance, determined to get the disease removed by an operation, if it was considered advisable, yet, when the scalpel touched the integuments she made a violent resistance. A second attempt was made, having previously secured her on a table with numerous assistants; but such was the force and exertion she made to extricate herself whenever the operation was about to be begun, that every hope of success was abandoned.

As the only resource, it then occurred to me, that if she would allow herself to be bled to a state of deliquium, the tumor might be extirpated while she remained insensible.

After a few days she submitted to this measure, and a large vein was freely opened while she sat in the erect posture, in a very warm room, in which there were seven people, with the doors and windows kept shut to hasten her fainting. No less than fifty ounces of blood were drawn before she fainted, and then a complete state of syncope came on, which lasted a sufficient time to allow the tumor to be removed.

With the assistance of Mr Young, the operation was accomplished with great facility; and in order to produce an exfoliation of the diseased portion of bone, its surface was rubbed over with kali purum. When the fainting went off, she would not believe that the operation had been performed, until she examined her face in a glass.

She suffered little from the effects of the operation, and though she remained pale and feeble for a few days, from the profuse bleeding, yet in a week, she was better than most patients are, who have undergone so severe an operation; and she rapidly recovered her wonted strength without in any way appearing to have suffered from the loss of blood.

The quantity of blood which was in this instance drawn, may to some appear enormous, but I was emboldened to proceed to that extent, from having almost universally observed, that those patients recovered from operations best, who lost the greatest quantity of blood; a fact strikingly illustrated after the battle of Waterloo, when it was found, that the wounded who were left in the field, and not taken into hospitals till the fourth and fifth day after the battle, recovered much sooner than those who were immediately attended to. This difference could only be accounted for, by the bleeding from the wounds being so extensive as to produce syncope; thus preventing inflammation and fever.

Nevertheless, it has not been my intention to recommend this mode of practice for general adoption. The result will shew, that, were circumstances equally urgent to suggest its employment, it may be ventured upon fearlessly.

On Affections of the Meatus Auditorius Externus. By Henry Earle, Esq. Surgeon to the Foundling Hospital, and Assistant Surgeon to St. Bartholomew's Hospital.

[From the Medico-Chirurgical Transactions, Vol. X.]

The sense of hearing is so important to the safety and happiness of mankind, and a partial or total loss of it deprives us of so many sources of information and pleasure, that it is certainly to be lamented that the treatment of the diseases of the ear should have been so long and so generally neglected by the profession at large. It will not, I trust, be deemed presumptuous in me to express a hope, that from a judicious application of the improvements which have taken place in modern surgery, to the treatment of these diseases, some benefit may yet be derived; and perhaps some affections of the internal organ, hitherto considered incurable, may be arrested in their progress by the early adoption of the most active and powerful measures. Should, however, our hopes of affording relief in the more obscure diseases of the labyrinth, prove falacious, we may yet be able to discover causes of deafness in the external ear and cavity of the tympanum, which have not hitherto been described, and which may partake of the nature of diseases affecting other parts of the body, and readily yield to the operation of known remedies.

I have been induced to make the above remarks, and to believe that much remains to be investigated in this unexplored path, from having met with an affection, which I shall proceed to relate to the Society, and which has I believe been wholly overlooked, though it is by no means improbable that it may have been not unfrequently the cause of deafness.

In the early part of 1816, Mr. F. an ensign in his Majesty's service, called to ask my opinion respecting a complaint in his ears, of which he gave the following account:

That from childhood he had been occasionally liable to attacks of inflammation in the external ear, accompanied with heat, excoriation, and a copious thin discharge from the passage, which affected his hearing, more or less, for several weeks, but left no considerable permanent deafness behind. About ten months before his application to me, he had been exposed to damp, and, in consequence, suffered a very severe renewal of the same disease, which so nearly deprived him of the power of hearing, as to oblige him to leave his regiment, then quartered in Ireland, in pursuit of further advice, with an understanding that unless he could obtain some relief, it would be necessary for him to quit the service, as he was quite incapacitated from active duty, by not being able to hear the word of command.*

On examination, I found the meatus of either ear much narrowed in its calibre, by the thickening of the surrounding parts, and especially the great increased density of the cuticle, which had a very white appearance, and was moistened by a thin discharge, resembling runnet whey, that deposited a substance not unlike small portions of curd. On washing this away, and dilating the passage with a little instrument, which I had constructed for the purpose of examining the external meatus, there was not the slightest appearance of cerumen; but the same white thickened cuticle appeared to extend as far as the eye could reach.

The sense of hearing was nearly lost, but a watch applied to the teeth or forehead was distinctly audible, a circumstance which convinced me that there was no defect in the auditory nerves. On throwing in water with considerable force, a dull obtuse sound was produced as if some dense medium were interposed. This led me to imagine that it was possible that the deafness depended either on a thickened state of the cuticle reflected over the membrana tympani, similar to that which lined the meatus, or on some morbid secretion existing between this cuticular layer and the membrane. This idea was strengthened by passing down a probe to the bottom of the meatus, which conveyed a sensation to my touch different from that which would have been produced by the contact of a healthy membrane; whilst at the same time it did not cause that painful sensation usually expressed by the patient in these circumstances.

After a little reflection, and entertaining this view of the subject, I thonght myself warranted in attempting the removal of the whole cuticular lining of the meatus externus. I hesitated less in making this experiment, as all common remedies had been resorted to in vain, and the case appeared almost hopeless, unless some new mode of treatment could be devised.

To effect this removal, I had recourse to the nitrate of silver, which I had often found beneficial in causing exfoliations of thickened cuticle from the feet, producing what are commonly termed corns.

I threw in with a silver syringe a very strong solution, and completely blackened the epidermis of the meatus.

In a few days I began to syringe with warm water, conceiving that maceration would contribute to the speedy separation of the exfoliations. After persevering for several days, for a considerable time each day, it began to be detached in small portions at first, but subsequently in larger pieces, one of which, from its form, was very evidently the reflected layer which had covered the membrana tympani. The next syringe-full which I threw in occasioned to the patient a very distressing sensation and loud sound. His hearing from this time was greatly improved, but still rather confused. The other ear was treated in the same way with similar success. In a few days the hearing was very nearly restored.

From the time of the separation of the cuticle, the treatment consisted in the application of ungt. hydrarg. nitratis ʒiv. cerati cetacei ʒiij. olei olivæ ʒj. He was directed to introduce a little of this, night and morning, with a camel-hair pencil; this was recommended with a view to stimulate the ceruminous glands to a more healthy secretion. Blisters were also directed to be applied behind the ears, and to be kept open for some time with the same intention. Soon after this, he returned to join his regiment, and I lost sight of him until very lately, when I had the pleasure of seeing him perfectly well; and he informed me that he had never experienced the slightest return of his complaint, and could hear as well as he had ever done in his life. On examining his ears, I found that a secretion of cerumen had taken place, and the lining of the meatus had a perfectly healthy appearance.

This very favourable result induced me to reconsider the subject, and to examine most of the authors who have treated of diseases of the ear; from their silence on the subject, I am inclined to think this peculiar affection has escaped their observation. Mr. Saunders, indeed, in speaking of the herpetic ulceration of the external meatus, mentions that it is accompanied with thickening of the lining, but does not seem to have suspected that a similar affection might extend to the reflected portion which covers the membrane; a state which must more or less impede the functions of that part, and, if suffered to increase, would probably terminate in permanent and complete deafness. On the ground, then, of its novelty, and from a wish to have the subject further investigated, I have ventured to bring this case before the Society, though I am well aware that insulated facts are rarely deserving the attention of the public, and ought at all times to be received with caution.

The cause of this thickened state of the epidermis may, I think, be traced to the thin ichorous discharge which takes place in the room of the healthy cerumen. It is well known that cuticle, in common with other substances possessing the same properties as the hoofs of animals, is liable to imbibe moisture, by which it becomes thickened, loses its transparency, is thrown into folds, and assumes a whitish colour. This fact is familiarly known to occur in the hands of washer-women, and when poultices have been applied for any time. Whilst this rugous state exists, the sense of touch is rendered very imperfect; but this appearance is soon lost on the evaporation of the moisture, and the cuticle resumes its former characters and functions. There is always, however, a separation of whitish curdy substance, which, on becoming dry, assumes the appearance of a powder, having a greyish tint, similar to that produced by scraping the cuticle with a knife. Considerable quantities of this will sometimes come away from the feet, if they have not been constantly subjected to ablution and friction, and it appears to be similar to the exfoliations which take place on a larger scale, from the sole of the horse's hoof.

In the case now under consideration I believe that, by the continued application of moisture, the whole cuticle was thickened, and rendered opaque. Under such circumstances, it is easy to comprehend to what an extent the sense of hearing must have been impaired, as those minute and delicate vibrations of the membrana tympani, which convey the undulations of the surrounding elastic medium to the internal ear, must have been greatly impeded, if not wholly prevented.

The curd-like substance which was found in the external meatus very closely resembled the furfuraceous separation which has been described as taking place from moistened cuticle, and most probably was of the same nature, as it was collected on the surface, and could be scraped off in considerable quantity with the flat end of an eye probe. In the early stages of this complaint it is probable that the injection of astringent washes, clearing the meatus from all extraneous matter, and anointing it with some stimulating ointment, would be all that would be required: should it however be suspected that the cuticular covering of the membrana tympani was much thickened, the treatment adopted in the case above related, might be had recourse to with every hope of success.

The lining of the external meatus, in common with the integuments of the rest of the body, is liable to various affections, some of which may be attended with considerable difficulty of hearing. A gentleman once requested me to examine his ears in consequence of a deafness which he had laboured under for some time. The symptoms he described very much resembled those usually attending an inspissation of the cerumen. On examination I found the whole passage choaked up with numerous scales, closely impacted together with a morbid secretion of cerumen. He had from childhood been subject to attacks of lepra vulgaris, which latterly never entirely left him, and at times spread over nearly the whole surface of his body. With some difficulty the passage was cleared of its contents. He was directed to syringe the ear every morning with a decoction of bran, or barley water, and to smear the surface with an ointment consisting of equal parts of ung. zinci, ung. hydrargyri nitratis, and ceratum cetacei. I likewise recommended him to take a strong decoction of sarsaparilla, with alterative doses of hydrargyri oxymurias. Under this treatment his general health improved much, and his cutaneous affection was mitigated. By persevering in the use of the syringe and the ointment his hearing was nearly restored.

I have met with one instance similar to the above, in which the patient, who was advanced in life, neglected to pursue the measures prescribed, and has, in consequence, been repeatedly under the necessity of having recourse to his medical attendant for the removal of the cuticular exfoliations and impacted cerumen, which never fails to afford him temporary relief.

Some time ago I was consulted by a lady on account of an affection of the ears attended with some peculiar circumstances. From her birth she had never had any proper secretion, the meatus was unusually dry, and the substance which was deposited bore none of the external characters of cerumen. She had two brothers and a sister who were all similarly affected, and one of her eldest brother's children was deaf and dumb, and the others were affected with difficulty of hearing. At times, when she had been exposed to damp, or was disordered in her health, the secretion was more abundant and much thinner; this irritated the passage, and the whole ear had an erysipelatous redness, accompanied with considerable tumefaction and distressing deafness. At the time when I saw her, she had been suffering from one of these attacks, and her health was much disordered. The natural form of the ears, particularly of the right, contributed much to increase the degree of deafness. The meatus was more curved than usual, and the tragus was so long, and projected backwards so much, that when swelled by inflammation it completely closed the aperture. To obviate this, she was continually drawing it forward with her finger, and introducing instruments into the passage, which tended much to keep up the irritation. I directed such medicines as I thought were calculated to improve her health, and endeavoured to sooth the local inflammation: still, however, the passage remained nearly closed, the sides being much approximated by the thickened state of the whole ear, apparently from interstitial deposit. To remedy this, I recommended that she should have a portion of sponge tent introduced every night into the meatus; in a short time, by this plan, the passage was considerably dilated, and her hearing much improved. She remained well for near a twelvemonth, when she again sent for me, on account of a severe erysipelatous attack in the right ear, accompanied with copious ichorous discharge. I recommended her to syringe it night and morning, and when the inflammation was a little abated, to anoint the passage with the ung. hydrarg. nitratis mitius. She improved rapidly under this treatment, and by persevering in the use of the ointment and syringe, she has experienced no return for several months, and can now hear better than she had done for many years.

This latter case shews, in a marked degree, the important part which the cerumen acts in the due performance of the functions of the ear. A deficient or vitiated secretion generally induces a diseased state of the integuments, which may become so thickened as to cause an obstruction in the ceruminous ducts, and thus maintain the disease. The cases which I have had the honour of submitting to the Society, sufficiently prove the importance of paying attention to the state of this secretion, and of the integuments which line the meatus, and will perhaps authorize us to hope, that, by the application of suitable remedies, many distressing cases of deafness may be palliated, and some permanently relieved.

History of a case of Nephritis Calculosa, in which the various periods and symptoms of the disease are strikingly illustrated, and an account of the operation of Lithotomy, given by the patient himself. By ALEX. MARCET, M. D. F. R. S. one of the Vice-Presidents of this society.

[From the Medico-Chirurgical Transactions, Vol. X.]

The subject of this remarkable case is a gentleman about forty years of age, who, to the advantages of a liberal education, unites an uncommon share of cheerfulness, and a firmness of mind which does not forsake him under the most trying circumstances. His habits are those of great activity, and he has long filled public situations of considerable labour and responsibility.

In the retrospective view of the circumstances of his illness, with which he has himself furnished me, he divides it into four periods. During the first, which he traces as far back as the year 1801, while otherwise in perfect health, he began to discharge calculous matter, which, however, occasioned at first but little pain, and none of the sensations in the region of the kidneys which became afterwards a source of so much suffering. This calcareous discharge consisted in a white chalky substance, generally passed immediately after voiding his urine, and enveloped in a quantity of thick mucus. In the course of 1802, however, this discharge became almost constant; some irritation was produced at the neck of the bladder and in the urethra, a troublesome chordee occurred, and the mucus frequently came away slightly tinged with blood. The calculous substance was at this time discharged in the form of a pretty stiff paste, which hardened on standing, and crumbled between the fingers into a white powder, in which sparkling crystalline particles could be discerned.

At this period the patient was about twenty-three years of age, of a tall and robust structure, and exceedingly fond of bodily exercises, in some of which he excelled in a remarkable degree. His general health was perfectly good.

The second period seems to have been connected with a change in his mode of life. Towards the end of 1803, his habits became extremely sedentary, and in 1804, he became subject to violent paroxysms of pain in the lumbar region, which were immediately attended by violent retchings, and more or less obstinate constipation. Under these circumstances cathartics were instantly rejected; but it often happened that a dose of laudanum sufficiently allayed the pain to enable him to retain the cathartic; and whenever a passage through the bowels was obtained, the nephritic symptoms were considerably relieved.

During these attacks, whether in or out of bed, it was hardly possible for the sufferer to place himself in any position which could afford him material relief. But that into which he invariably endeavoured to throw himself, by a kind of irresistible impulse, consisted in inverting his body as much as possible, which he effected by elevating his lower extremities and body along the bed-post, with his head downwards, and resting entirely upon his shoulders. During this period no calculous matter was passed.

In 1806 and 1807, these attacks became less frequent, which the patient ascribed to his duties having become less arduous, and his habits less sedentary; and in November, 1810, they ceased altogether. During the prevalence of the paroxysms, very little, if any, of the calcarerous matter was passed, but there still was occasional irritation about the neck of the bladder, and he was subject to a troublesome degree of flatulence and constipation, which required the use of frequent aperients, and in particular of magnesia, from the habitual use of which he derived considerable relief. In other respects his constitution remained sound, and his strength and spirits unbroken.

Soon after the cessation of paroxysms just mentioned, our undaunted sufferer was assailed by symptoms of a still more severe description. Here begins the third period; a stone had formed in the bladder, with all the well known train of sufferings it produces. First, increased irritation at the neck of the bladder, tormenting itching and shooting pains at the extremity of the urethra, violent chordee in the night-time, a difficulty of passing his urine, which was frequently tinged with blood, &c. The patient now became incapable of riding or dancing, and even walking became very troublesome.

These symptoms gradually increased, till they arrived at the utmost pitch of severity. However familiar they are to physicians and surgeons, it will not perhaps be without interest to hear them described by the patient himself, whom, after an acquaintance and professional attendance of several years, I can state to be much more apt to underrate than to exaggerate his sufferings.

"The only position," says he, "in which I could succeed in passing my urine, was upon my knees, with my forehead placed upon the bed or sofa, and the urinal under me. All changes of posture were dreadful, especially from the erect to the recumbent position. Getting into or out of bed were the severest trials, especially the former. I have often made repeated attempts at different modes of accomplishing this object, and resolution has failed, when at length, having succeeded so far as to get into bed on my knees, with my head placed as low as possible, I have not had courage to move, till, in a state of exhaustion, I have cautiously extended one limb and gradually got upon my side. When awoke by irritation and pain, I have endured it as long as I could, rather than move; and when goaded to an effort, I usually regained the position on my knees, and after waiting the subsiding of the chordee, endeavoured to obtain relief by passing my urine. While labouring under these unpleasant effects, they were almost constantly increased by costiveness and flatulence; the use of the hip-bath, sitting over the steam of warm water in the pan of a night table, aperient medicines and injection with an elastic gum-bottle, were the palliatives to which I had recourse."

Until then, though his own suspicions were almost amounting to a conviction that he had a stone in his bladder, yet he had never been sounded, and therefore some doubt still remained in the minds of his friends as to the precise nature of his disorder. He was advised to go to Brighton, for the purpose of using the tepid bath. The motion of the carriage during the journey produced so much pain and irritation, that he declares that, even now, he almost shudders at the recollection of the torture he endured. Still, even at this period, he had intervals of ease, during which his spirits were good, and he almost appeared to be in perfect health.

One day, while at Brighton, in December 1811, and after an unsuccessful attempt to sound him, made by a medical person, he seized upon a bougie and introduced it himself into his bladder. He then distinctly felt the bougie graze upon a hard substance, and upon withdrawing it, he found the point strewed with glittering particles of calcareous matter. Immediately on his return to London, a consultation was held, in which the presence of a stone having been fully ascertained, he was advised to undergo the operation of lithotomy, upon which he instantly made up his mind; but as the introduction of the sound was followed by the discharge of a few calculous fragments, which afforded a glimpse of hope that the calculus might be entirely discharged in that way, a second consultation was held, at which it was agreed that a delay of a month would be allowed, with a view to the possibility of such a happy termination. Those hopes, however, proved entirely groundless, and on the day before the month expired, Mr. Cline performed the operation.

However familiar all the circumstances of this severe operation are, no doubt, to most of the members of the Society, a description of the patient's sensations, drawn up by himself, cannot, I think, fail to excite some interest, and I shall make no apology for introducing it in his own words:

"My habit and constitution being good, it required little preparation of body, and my mind was made up. When all parties had arrived, I retired to my room for a minute, and bent my knee in silent adoration and submission, and returning to the surgeons, conducted them to the apartment in which the preparations had been made. The bandages, &c. being adjusted, I was prepared to receive a shock of pain of extreme violence, and so much had I over-rated it, that the first incisions did not even make me wince, although I had declared that it was not my intention to restrain such impulse, convinced that such effort of restraint could only lead to additional exhaustion. At subsequent moments, therefore, I did cry out under the pain, but was allowed to have gone through the operation with great firmness.

"The forcing up of the staff, prior to the introduction of the gorget, gave me the first real pain; but this instantly subsided after the incision of the bladder was made, the rush of the urine appearing to relieve it, and sooth the wound.

"When the forceps was introduced, the pain was again very considerable, and every movement of the instrument, in endeavouring to find the stone, increased it. Still, however, my mind was firm and confident, and, although anxious, I was yet alive to what was going on. After several ineffectual attempts to grasp the stone, I heard the operator say, in the lowest whisper, "it is a little awkward, it lies under my hand. Give me the curved forceps:" upon which he withdrew the others. Here, I think, I asked if there was any thing wrong, or something to that purport, and was reanimated by the reply, conveyed in the kindest manner: "Be patient, sir, it will soon be over." When the other forceps was introduced, I had again to undergo the searching for the stone, and heard Mr. Cline say, "I have got it." I had probably by this time conceived that the worst was over; but when the necessary force was applied to withdraw the stone, the sensation was such as I cannot find words to describe. In addition to the positive pain, there was something most peculiar in the feel. The bladder embraced the stone as firmly as the stone was itself grasped by the forceps; it seemed as if the whole organ was about to be torn out. The duration, however, of this really trying part of the operation was short; and when the words "now, sir, it is all over!" struck my ear, the ejaculation of "thank God! thank God!" was uttered with a fervency and fulness of heart which can only be conceived. I am quite unable to describe my feelings at the moment. The most captivating vision to the sight, the most enchanting harmony to the ear, or a combination of every thing that is calculated to delight the senses, must fall far short of the perfect blessedness of my situation. There was a feeling of release, not from the pain of the operation, for that was gone and lost sight of, but from my enemy and tormentor, with a lightness and buoyancy of spirits, elating my imagination to the belief that I was restored to perfect health as if by a miracle. Yet, with all this elation, a disposition of mind perfectly tranquil and collected, nor were my nerves in the slightest degree affected. I never heard what was the precise duration of this operation, but conceive it to have been between twelve and fifteen minutes. With respect to the pain, I am persuaded that if it were possible to concentrate what I have often suffered in one night, into the same space of time, it would have been less endurable. Indeed, this difference between the operation and one night's endurance of the stone was manifest. I have often been most distressingly reduced by the latter, but was not exhausted in the slightest degree by the former; at least my mind was firm throughout, and my body was not sensibly enfeebled. Upon the whole, should I be again similarly afflicted, I should not hesitate in again submitting to the same mode of relief, provided I could place myself in equally able hands."

The recovery from the operation was as rapid as might have been expected, from the favourable state of mind and body in which the patient was at the time he submitted to it. At the end of the second week he ceased to keep his bed; at the expiration of the third he was able to go down stairs; and at the end of the month he walked near two miles. By the end of the sixth week he was able to ride on horseback, and was in fact perfectly recovered; but the tone of the sphincter was but slowly regained, especially when walking or standing, when he found it very difficult to retain his urine.

His general health, however, was soon perfectly restored, and he began again to enjoy his usual vigour, with an uncommon flow of spirits. In this happy state he remained until about eighteen months after the operation, when he was suddenly seized with very acute pain in the region of the left kidney, which lasted for several hours, when a sharp knock at the street-door made him give a sudden start, and the pain instantly ceased. On attempting to pass his urine a moment after this, a small calculus stuck in his urethra, but was soon discharged without difficulty, and the patient was immediately restored to his usual state. In a few weeks, however, his urine became habitually tinged with blood, though, at that time, without any pain or uneasiness, and it generally looked, immediately on being discharged, like a mixture of florid blood and water; and there was no longer any appearance of dark-coloured coaguli, except in the first urine discharged in the morning. He continued nevertheless to be subject to dreadful attacks of nephritic pains, ending in the discharge of a small calculus; and one of these attacks put a sudden termination to the appearance of blood in the urine, which however returned in the course of about two months. Between the attacks of pains his recovery was complete; he was not sensible of any affection of the kidney, any farther than from an occasional sense of fulness and tenderness in that organ; and he continued perfectly free from any symptom of calculus or disease in the bladder. During the nephritic paroxysms the pain was always felt in the left kidney, except in one instance, in which the right kidney was the seat of attack, and in this case also a small calculus was discharged.

When I was first consulted on this interesting case (in 1816,) I examined the calculus extracted by the operation, which proved to be of the fusible kind, as well as all the fragments since discharged. These were of a globular shape, and were therefore neither detached from a larger mass, nor secreted on the surface of the bladder, but proceeded, as the symptoms fully indicated, from the kidneys only.

I advised the patient to discontinue all alkaline remedies, and to substitute for them small doses of muriatic acid, a plan to which he readily assented, and which he continued to follow with great perseverance for the greatest part of that year. The acid, in the dose of from ten to fifteen drops, diluted in water, two or three times a day, agreed with his stomach perfectly well, and seemed to have the effect of diminishing the discharge of mucus considerably, though the habitual hemorrhage still continued.* But this did not hinder him from using all kinds of exercises without inconvenience. He had, however, a sharp nephritic attack in the following January, (1817) which terminated as usual, and for a short while suspended the hemorrhage. In April, of the same year, he experienced another nephritic attack; and in the following July he had a long and severe fever which lasted several weeks, and was supposed to have been brought on by some great exertion and mental fatigue, to which he was then exposed, being apparently quite unconnected with his calculous disorder.† On the third day of this fever, however, he observed, to his great surprise, that the hemorrhage had entirely left him, and from that time it has never returned. This fever did not only produce the beneficial change just mentioned, but it was followed by a long truce of the nephritic attacks, which (with the exception of the passage of a few small calculi which occasioned no pain) was not interrupted till towards the latter end of April last, when he again experienced a paroxysm which ended in the discharge of a small calculus, without however producing any return of his former hemorrhage. I am happy in being able to state that he is at this moment in perfect health and spirits.

I have only to add to this long, but I hope not uninstructive narrative, that a full trial was given in this case to the muriatic acid during the year 1817, which was only interrupted by the attack of fever above related. The small calculi passed during that period, the largest of which was scarcely the size of a pea, continued to consist of phosphate of lime; but I could no longer detect any magnesia in them, and they had lost the fusible character. And it is equally remarkable, that during the year 1818, and some time after the use of the muriatic acid had been discontinued, the magnesia reappeared in the calculous fragments voided during that period.

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* In describing the different appearances of the blood, the patient, in one of his letters, dated March, 1819, relates the following singular occurrence. "Perceiving," says he, "several small masses of coagulated blood in the urine, and that the urine itself was not at all tinged, I poured it off to examine the blood more narrowly, when I found that these masses were coils of blood of the thickness of a stout packthread, and upon moving them about they looked very like small red worms; and as I had passed my urine about half an hour before, without observing any such appearances, I inferred that this blood must have immediately come from the kidneys, having derived its form from the ureter."

† During this fever, and on various other occasions, the patient was attended by Dr. Maton. He was also seen once, in consultation with me, by Dr. Baillie.

Case of Parturition, rendered difficult by a Tumour within the Uterus, which was extirpated successfully. By Mr. JAMES BELL, Surgeon, Forres.

[From the Edinburgh Medical and Surgical Journal, July, 1820.]

Mrs. B——, aged 32 years, healthy, of small stature, but well formed, became in labour on the evening of Friday the 23d July last. On Saturday morning, an experienced midwife was sent for, and continued in attendance. On the afternoon of Wednesday the 28th, I was desired to visit her, and had the following account of the case from the midwife: That the pains had been irregular, sometimes pretty strong and frequent, at other times weak, and at long intervals;—that she had passed urine freely, but had no alvine evacuation;—that several attempts to throw up a glyster had been made without success;—that the os uteri was fully dilated, and that the membranes had, at an early period, given way. I found my patient's pulse good, that she had no headache, sickness, or any other complaint, except what arose from the labour pains. On examination, I found the os uteri dilated; the head of the child resting on the brim of the pelvis, could be touched with the fore-finger; but at the posterior part, over the rectum, I felt what I conceived to be the apex of a fleshy tumour, projecting a little without the uterus, firm and unyielding, and interrupting free access to the child's head. Finding it impossible to alter the position of the tumour, and unable at this time to ascertain either its size, mode, or place of attachment, the labour pains also being trifling, and exerting no influence on the uterus or its contents, I determined to give an opiate and wait its effects. It suspended the pains, and procured some sound and refreshing sleep. About five o'clock on Thursday morning the pains began with some force and regularity, and the tumour advanced a little. I now endeavoured to ascertain its size and origin, and found it filling all the back part of the uterus, (as far as I could reach,) and completely preventing the advance of the head. I tried again to push it up, but found it absolutely impracticable. Finding all my endeavours to push back the tumour, and to expedite the delivery in this way, ineffectual, I was at a loss how to act. Had I cut off the part of the tumour within my reach, even if it could have been done without risk of hemorrhage, (which, from its size, seemed likely to be profuse,) no advantage could have been gained, as the greatest part of the mass was still within the uterus. The child could not have been delivered by the feet, as it was impossible to pass a finger between the head and the tumour. The head was beyond the reach of the forceps, the application of which, even if it had been lower down, was impracticable. The lever was inadmissible. The operation of embryulcia also was, by the peculiar circumstances of the case, rendered both doubtful and dangerous. As there was no certainty of the child's death, nor as yet any other bad symptoms in the woman than those already mentioned, I determined to wait and trust a little longer to the assistance of nature. The pains, although weak, continued, with some advance of the tumour, till eleven o'clock, A. M. of the 29th; they then ceased, and did not return for some hours. About two o'clock, P. M. they again came on, and the tumour advanced. Hitherto there had been no flooding, now it came on in considerable quantity; the pains again ceased, and never returned. I now endeavoured to assist the expulsion of the tumour, by grasping that part of it within my reach, and gently pulling it from time to time. The hemorrhage ceased, and I at last succeeded in bringing the bulkiest part of the mass without the parts. I now found that it was attached by a neck; but this neck, instead of being slender, as I had hoped, was, to my great disappointment, so thick that I could scarcely grasp it. I also ascertained that the occiput lay towards the left, and the face towards the right sacroiliac synchondrosis. It still being impossible to deliver by turning, by the lever, or the forceps, and the woman having become extremely restless, and her pulse very quick, I determined to perforate the head. This, owing to my being unable to guard the perforator with my left hand, was exceedingly difficult. I at last succeeded, opened the head, took away in pieces the ossa parietalia and greatest part of the brain, introduced the crotchet, but could not draw down the head. I therefore resolved to wait some hours. She had some sleep. At three o'clock, A. M. of Friday, I brought away the child with considerable difficulty. About half an hour afterwards, the placenta, which was attached to the fundus uteri on the left side, was removed. The flooding, at first considerable, soon became moderate. I tied two ligatures round the neck of the tumour, gave the woman an opiate and left her. Next day, I cut off all that part of the tumour below the ligatures; very little blood followed; that same night the neck came away, in a state of putridity, (as I was told,) while passing urine Of the after treatment of the patient, it is unnecessary to say much. Her bowels were opened by gentle laxatives. The fetor of the discharge was corrected, and every other attention, which the case appeared to require, was paid. Her recovery has been rapid and complete. The tumour, which was strictly steatomatous, was attached to the posterior part of the uterus, more than six inches from its mouth. Its bulky part was heart-shaped, and I am convinced it must have weighed fully six pounds.

This was Mrs. B——'s first pregnancy, and during it nothing particular occurred. She enjoyed better health than is usual in such a situation. One thing only deserves notice. She supposed herself to have gone three months beyond the usual time; and this may probably be accounted for, by her dating from the formation of the tumour, and not from the conception of the child.

Forres, 28*th August*, 1819.

SELECTED REVIEWS.

Exposition of the Doctrine of M. BROUSSAIS.

[From the London Medical and Physical Journal, of January, 1820.]

As we were preparing to fulfil our promise to give an exposition of the doctrine of M. Broussais respecting the disorganizations consequent on certain species of inflammation, and on phthisis and some other analogous diseases,* a work appeared, bearing a title which could not fail to engage our particular attention:

The Lectures of Dr. Broussais, on the Gastric Phlegmasiæ called idiopathic continued Fevers by Authors, and on the acute Cutaneous Phlegmasiæ.†

M. Broussais has for several years promised to develop more fully his doctrine, especially as it regards some particular diseases, than he has done in his *Examen* and the *Histoire des Phlegmasies Chroniques;* but, while this exists in expectation, two of his pupils dedicate to him his Lectures on some of the most interesting points of it, and, in patronizing the work, he might be considered as recognizing the doctrine as his own. But a perusal of these *Lectures* has led us to be confident that this can only be done in a general manner: there is so much vagueness in many parts of them; so little connected reasoning in the exposition of general principles; and, on many occasions, such imperfect accounts of what is clearly and comprehensively displayed in the writings of M. Broussais. How, then, are we to regard these Lectures? and what use are we to make of them? As the exposition of MM. de Caignou and Quemont of certain parts of the Professor's doctrine, with the imperfections, to say no more, consequent on its being derived from instruction from the chair. We shall, then, place these Lectures by our side, whilst we proceed with our own exposition, and refer to them when they speak in a particular manner on points only treated generally in the *Examen* and *Histoire des Phlegmasies Chroniques:* always, however, taking care to designate what we derive from this source, that it may not be confounded with what we give as the doctrine of M. Broussais; and, in order that no confusion may arise, we shall place within parentheses all that is taken from MM. de Caignou and Quemont.

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* See *London Medical and Physical Journal*, vol. xli. p. 347.

† *Leçons du Docteur Broussais, sur les Phlegmasies Gastriques, dites Fièvres continues essentielles des Auteurs, et sur les Phlegmasies Cutanées aiguës* par E. DE CAIGNOU, de Mortagne, Docteur en Médecine, &c.; et A QUEMONT, Docteur en Médecine, &c. 8 vo. pp. 290. à Paris, chez Méquignon-Marvis, 1819.

The nature of the varieties of organic lesion consequent on the various species of inflammatory action, will first engage our attention; and, as we have already given an account of M. Broussais' pathology of inflammation generally, we may proceed immediately to its particular application, and the history of the phenomena resulting from its existence.

M. Broussais considers that a distinction may be made between inflammation as it affects the red capillary, or sanguiferous, vessels; and that of the white, or lymphatic vessels. The former may be either more or less acute; to all the varieties of the latter he gives the generic term *sub-inflammation*; and he calls *mixed* inflammation the simultaneous irritation of the sanguiferous capillaries, and the exhalant, absorbant, and secretory, vessels. Here M. Broussais has not been happy in the choice of his expressions; if the term *sub-inflammation* can convey any precise idea, it must be that of an inferior degree of inflammation, considered absolutely; not, as he intends to signify, a relatively inferior degree of exalted action, when compared to excitement of a similar nature having its seat in other parts of the system: it would therefore have been better to have chosen some term merely designative of inflammation of the white vessels, or exhalants.

The various modifications which irritation, resulting from the impression of a stimulant of any kind, will effect on the organs, may be observed in the following states: 1°, in all the tissues, inflammation of the sanguineous vessels, carried to a high degree, determines the transformation of the part into a red mass, more or less compact, and variable in volume, according to the degree of development of which the organ is susceptible; 2°, a less intense degree of irritation, when it does not terminate by *delitescence* or resolution, transforms the cellular and parenchymatous tissues into a substance analogous to that already designated, but less red and less painful; 3°, in proportion as it extends from the epoch of the invasion of the disease, the induration or red carnification becomes more pale: it terminates by assuming a white aspect, which indicates that the non-sanguiferous vessels have contracted the irritation, whilst that of the red capillaries, which gave the impulse to the disease, has subsided; 4°, when the white vessels are irritated without any apparent previous inflammation, the tissues assume, in the first instance, either the aspect above mentioned, or one of those about to be described; 5°, after this modification of the vitality of the white vessels has lasted for a greater or less length of time, we find united in the tumor, especially when the affected part is of very complex organization, a great number of different matters, such as white, grey, or yellow indurations, in masses more or less analogous to that which has been called schirrous, cancerous, and tuberculous, matter, with calculous or osseous concretions, in the midst of those masses; and at other times they are interspersed in a confused manner with white, yellow, greyish globules, more or less hard and friable; 6°, a period arrives at which these extraneous bodies, modified by the vital actions, become decomposed, and irritate the adjacent parts, and these become themselves the seat of inflammatory excitement, which destroys them and produces ulcers,the progress of which is often attended with considerable ravages.

Let us now proceed to the development and illustration of the foregoing propositions.

Inflammation of the sanguiferous vessels may be dissipated at the end of a certain period; and this is termed *delitescence*, or resolution. (Some evacuation or other, termed critical, is then observed, say MM. De Caignou and Quemont: sometimes abundant sweats appear, the cutaneous exhalents then assuming more activity. Sometimes there are copious evacuations of urine, with a copious deposition of a mucous sediment, forming a cloud, in the middle of that fluid. The former phenomenon is observed in phlegmonous and parenchymatous inflammations of considerable extent. The local consequences are a softening and subsidence of the tumefaction of the part, accompanied by absorption of the fluids evacuated during the inflammation; and often no sensible traces are left in the cellular tissue. These observations apply especially to delitescence. When it may be said to terminate in resolution, there are sometimes found adhesions of the cellules of the tissue above mentioned; which is also remarked after this mode of termination in serous membranes. In the mucous membranes, the exudation, in the first instance wanting, becomes serous and abundant; then more thick, and of a mucous appearance: it approaches to the nature of pus. The membrane suffers no alteration in its texture. In the parenchymatous structure, the product has a cream-like appearance. The resolution takes place in the same manner as in the mucous membranes. In the cutaneous texture, it terminates by desquamation. In the fibrous textures, it leaves a coating over the parts, that gradually disappears. It is not known how it terminates in the synovial membranes. In general, when not evacuated externally, the product is absorbed, and then thrown out of the system by some of the excretory organs.)

2°. It may produce a too rapid sanguineous engorgement, which overpowers the vitality of the part: this is gangrene by excess of inflammation. (In the lungs, local death is manifested by a real apoplexy affecting the organs, so that their functions are suddenly suspended by the afflux of blood and the compression of the bronchial vessels, produced by this fluid. In this case, general death takes place sooner than gangrene, from the importance of those organs. This phenomenon prevents our finding, on opening the dead body, any trace of putrefaction. Gangrene of the lungs is extremely rare: it sometimes takes place, especially as a consequence of deleterious causes;* and then only one lung can be affected, the sound one supplying the functions of the other, and prolonging life sufficiently to permit it to putrify. We have observed few cases of this kind.)

3°. It may disappear, because of the organs dying from previous debility of the vessels, or from the influence of a deleterious or sedative cause, which may itself have been local irritation; this is gangrene by debility. (Gangrene from a deleterious cause, malignant pustules, and carbuncles, should be arranged with those which depend on debility, because the poison destroys the vital powers in the midst of the inflammation.)

4°. By producing suppuration; which supposes that the sanguiferous capillaries terminate on a cellular or serous tissue capable of expansion. (In this case, the irritation is not confined to the red capillaries; and the proofs of it are, (*a*) that inflammation may persist in them for a long time without producing pus; (*b*) that pus may be formed by cellular and serous tissues, without having been preceded by inflammatory symptoms. The termination of inflammation that produces pus, supposes two things: (α) that the part is furnished with an expansible cellular and serous tissue; (β) that the inflammation is communicated to this tissue in the peculiar degree which produces suppuration. The cellular tissue existing in very small proportion in the dura mater, true pus is very rare. The secreted liquid is rather transparent and gelatinous: collections of true pus are, however, found there. The product of inflammation of the *arachnoid membrane*† resembles that of the pleura and the peritoneum. Irritation of the sanguiferous vessels may exist without the formation of pus. In setons, suppuration is often suddenly suppressed, although the irritation and redness continue to exist. This phenomenon may be observed in all the tissues susceptible of inflammation. We may then conclude, that suppuration is only an incident in inflammation. If we see phlegmasiæ become chronic because they are kept up by the pus, there are also others found existing a long time without this cause. There are examples of persons who, for several years, have presented all the symptoms of inflammation of the viscera, in whom, on examining the dead body, not the slightest trace of pus is present, nor even the smallest appearance of suppuration.)

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* The expression of MM. De Caignou and Quemont:—perhaps inspiration of some gaseous fluid is meant.

† *Meningette* is the term used by the writers of the Lectures:—we think they mean the *arachnoid* rather than the *pia-mater*. *Meningine* we translated *dura-mater*. Our translation appears to be correct only from the pathological observations applied to those terms. M. Broussais has never used them in his writings; and, if he has orally, it is but

5°. *It may continue in a chronic character:* its effects then present a multitude of varieties, according to the texture of the part, its vitality, and the general disposition of the patient. The principal results are: (*a*) sometimes it is confined to the sanguiferous capillaries, permanent congestion in which presents the red induration, which takes different names according to the organ in which it is seated: in the skin and cellular tissue, callossity; in the mucous membranes, no particular name; in the lungs, hepatization, &c. But all the tissues do not submit themselves to this form of alteration. If the chronic inflammation is not confined to the red vessels, then, (*b*) in the cellular tissue, it will produce pus, which, if it be retained and decomposed, may itself keep up the inflammation, until the general exhaustion of the vital powers is the consequence; (*c*) in the membranes, the results will be different according to the tissues which exist in them, and the disposition of each of them to contract irritation: it may then develop phlyctenæ, herpes, dartres, indurations, ulcers, pustules, horns, tubercles, &c.: in the mucous membranes, a copious secretion of mucus, more or less resembling the pus of phlegmon; a concrete, cream-like suppuration; and the ulceration of cryptæ; in the serous membranes, an exudation of a multitude of varieties of character; (*d*) in the parenchymatous secreting organs, suppression, augmentation, or alteration, of the product of their secretion; (*e*) in all the organs, without exception, it may develop the cellular tissue, produce fasciæ of various kinds, and alter the lymphatics, so as to present all the degenerescences termed cancer, phthisis, scrofula, and fungus hæmatodes.

The alterations of structure arising from *inflammation of the*

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lately that he has done so. The writers of the Lectures should have explained what they meant. This must be placed amongst the multitude of faults in their publication of the Lectures of the Professor at the Val-de-Grace.

white vessels, appear under various forms, according as different species of vessels are particularly affected. (1°. The tuberculous. The glands which present this alteration, first acquire increased size and hardness; from red they pass to dull white, then become soft, and take the consistence and colour of cream. It is seen in the glands of the bronchiæ and mesentery. The same alteration is observed in the absorbent vessels of the cellular and serous tissues. 2°. The lardaceous. It is so termed from the resemblance it has with lard. Its seat is in the cellular tissue, which it renders, as it were, infiltrated with gelatine. It is not possible to say what are the vessels which most contribute to its formation. 3°. The encephaloid or cerebriform. This is white and softish, and is observed in the cellular tissue. It nearly approaches to the tuberculous. 4°. The melanose, thus termed because of its blackish colour, does not make a distinct species from the preceding. The black colour affects indifferently all the degenerations. 5°. The cartilaginous, the osseous, and the calcary. The two former are sometimes organized, aud are met with in the ossification of arteries and of the cellular tissue. The third is inorganic: it is found in the midst of the depositions of matter established in the different disorganized tissues. It is also observed in some glands. 6°. The degeneration into erectile tissue, thus termed from its analogy to that of the corpora cavernosa. It appears in the skin, in nævi materni and fungus hæmatodes. The nature of it is not well known, but it appears to appertain to the sanguiferous capillaries. It has been seen in the different viscera. 7°. The polypous, or fungous degeneration. It is a vegetation which arises from the cellular tissue. This vicious nutrition is sometimes observed with the alterations already spoken of. It contributes, perhaps, to the carcinomatous and cancerous degenerescence, which forms the highest point, and, as it were, the termination, of the disorganizations. 8°. Encysted degenerescence, and the transformation of one tissue into another, without speaking of ossifications and accidental formation of cartilage. It is thus are formed cysts endowed with hair, species of accidental mucous membranes, and that certain cysts are developed around coagula of blood, and foreign bodies present in their interior a smooth exhalant surface, analogous to that of the serous membranes.)

The many points in which M. Broussais, Dr. Baron and Mr. Langstaff, concur on this subject, will be immediately discerned. The difference between them may probably depend more in words than in ideas. In using the term inflammation, M. Broussais only means to signify a certain alteration in the action of the vessels, which he believes to be greater than the natural action, because it arises from the impression of stimulants, and it passes to what is evidently inflammation, and returns again to the former state, merely from the impression in a greater or less degree of the same causes, and with only a variation of the same general phenomena. Somewhat seems to depend, too, on the different constitution of different individuals; for we see that, from identical causes, sanguine robust subjects are affected with violent phlegmasiæ; whilst the less strong, slender, lymphatic, feebly developed subjects, have them in a less pronounced degree, and of the chronic character from the commencement. It is in the latter that irritation is tacitly communicated to the lymphatic vessels, and insensibly leads to tuberculous and other disorganization. We find also, 1°, that, whenever those disorganizations have been preceded by general irritation of the sanguiferous system, their progress is more rapid in proportion as that has been more violent. 2°. When they have not been preceded by such irritation, the cause has nevertheless always been stimulant, as is proved by their etiology; and their progress may be accelerated or retarded, by calming or rendering more powerful the action of those stimulant agents. 3°. They are always seen developed in those tissues endowed with the greatest vitality, in the periods of life when those tissues enjoy the greatest activity, and never in parts which have become affected with paralysis. M. Broussais shows, too, that there is no tissue in which the disorganizative irritation may not be developed in two different manners: 1°, with violent re-action of the sanguiferous system; 2°, without being preceded by this re-action. It is important to remark, that these affections influence other parts, according to the common laws of sympathy: as this will explain the transmission of the disease from one part to another, &c. and all the circumstances supposed to indicate the existence of a *specific virus.*

We have not terminated the exposition of the doctrine of M. Broussais: something should be said respecting ulceration in those degenerescences. Whenever the phenomena which accompany cancerous decomposition, or the ulceration of schirrous and tuberculous masses, are observed, we find, says M. Broussais, that inflammation of the sanguiferous vessels is developed, and that the progress of the disorganization thence arising is more rapid as that inflammation has been more intense. We always see simultaneous inflammation of the sanguiferous and non-sanguiferous vessels, for that constitutes the character of disorganizing and propagative inflammation; and this mixed inflammation is never developed but under the influence of either local or general excitant causes. All those substances, then, which stimulate locally, or which sympathetically exalt the actions of the nervous and sanguiferous systems, accelerate the progress of the disease.

We have not yet spoken of the influence of the local diseases above designated on the functions of other parts of the system; but, we shall now give a general summary of the phenomena which thence result.

Inflammation has a more powerful influence on the exercise of the functions in proportion to the greater degree of its energy, and *vice versa.* Thus,

1°. From *inflammation of the sanguiferous vessels of the phlegmonous character*, we observe fever, more or less general uneasiness, very severe disorder of the nervous functions, and derangement of the secretions; and, from the *progress of the disease with its prolongation into the chronic state, with suppuration, ulceration,* &c. severe hectic fever, consumption, and marasmus.

2°. From *inflammation of the sanguiferous vessels of organs but little supplied with red capillaries, or extended in membranes,* less acute fever, considerable nervous disorder, and corresponding derangement in the secretions; but all these accidents are not constant, and often some of them are present but in a very slight degree. From *its prolongation into the chronic state*, with suppuration, ulceration, &c. mild hectic fever, often hardly decisively marked; slow consumption, and marasmus proceeding but slowly; unless the inflammation occupies the organ which presides over assimilation: in this case, the extenuation is prompt, considerable, and does not depend on the fever. Dropsy may occur, especially if the hectic is but slight in degree.

3°. From *inflammation of the lymphatics*, or irritation of the white capillary vessels, no fever, no sympathetic disorder; unless when complicated with the preceding species of irritation. From *its long duration*, if the irritation of the white vessels is pure and simple, alteration of nutrition, derangement of the serous and lymphatic secretions, and dropsy. From *ulceration of the degenerescences*, if combined with a high degree of phlogosis of the sanguiferous vessels, very rapid hectic fever, and very considerable marasmus: if combined with less degree of such inflammation, the same phenomena, only less intense and less rapid in their progress and succession.

Before we proceed to M. Broussais' doctrine of other morbid affections, we shall adduce some remarks on the treatment of some of those that have already engaged our attention. It is to the organic degenerescences that we shall confine our remarks; as, apparently in a great measure from the notions that have been entertained respecting the origin of the greater part of them, they have been generally considered as incurable. Supposing them to be formed of new tissues spontaneously developed, without any previous inflammation appearing to give them birth, it has been concluded that they are parasitic animals, as their structure also differs from the natural membranes, the appearance and increase of which have been considered equally inexplicable, and against which all the efforts of art have been supposed to be unavailing. M. Broussais vigorously attacks this despairing doctrine. We retrace our steps to adduce in detail some of his remarks on this point, which we only gave in a general manner in the foregoing exposition. After having collected and combatted the arguments of his adversaries, he establishes, "that the non-sanguiferous vessels of different orders, whether exhalents, absorbents, or secretors which are endowed, as Bichât demonstrated, with a peculiar irritability and species of vitality necessary for the exercise of their functions, are susceptible of aberrations in their properties, independently of that exaltation of action of the sanguiferous system which we qualify with the term inflammation; nevertheless that, in the most ordinary cases, this aberration is communicated to them by the inflammatory state, as all those know who have taken the trouble to trace, in a great number of instances, the origin of congestions, schirrosities, &c. This fact leads us, then, to think that, in the cases where the tumefactions are not preceded by the inflammatory state, the aberration which disorganizes them is not less the effect of an exaltation of their organic action. The causes which preside over their formation in the latter circumstances, show the propriety of this manner of regarding them; since these causes may be always reduced to either an immediate or a sympathetic excitation, which has augmented the vital action in the degenerated part at the expense of that of others. I may here repeat what I said in speaking of hæmorrhages and inflammations; which is, that these alterations, or degenerations which are developed in the non-sanguiferous vessels, are ordinarily manifested in the organs endowed with the greatest vitality: in those where the vessels in question are animated by numerous sanguiferous capillaries; in those where we find, with those conditions, a great number of nerves, much sensibility, and a close texture, which opposes itself to a free development of the phenomena of inflammation;—such are the breast, the facial region, the most firmly bound and most sensible parts of the digestive canal, the neck of the uterus, the parenchyma of the lungs, and, lastly, all parts of the body, (for the same tissues every where exist,) when a violent cause of any kind has for a long time exalted their vital properties."—*Examen*, pp. 298-300.

M. Broussais has on these principles endeavoured to prove that it is possible, if not to obtain the resolution of the tumors formed by those new tissues, at least, to prevent their formation in the greater number of cases. If, indeed, they are ordinarily the result of prolonged irritation, it is evident that, in combatting this irritation by appropriate means, we may evidently prevent the degenerescences that arise from it in the greater number of instances. When the disease is seated in external parts, emollient applications, local blood-letting, and a severely-restricted diet, are the means to be employed in their cure. The body should be made to live at its own expense, in a manner, for a certain length of time. It was by following the latter indication that GIRARDOT had such astonishing success in the treatment of scrofula. *Fames rectè ordinata, scilicet nimia et prava ciborum ingestio cautè et indesinenter prohibita,* he regards as the chief means of cure; and, he continues, *frustrà sudaverit medicus strumosam pharmacis insequendo diathesim, nisi congururenter famem foverit.* Sometimes, when inflammation of the sanguiferous vessels is not conjoined, stimulants may be employed to change the mode of irritation locally, or develop the action of sympathizing organs, and thus produce revolution. Sometimes specific stimulants are required, as that of mercury in syphilis, &c. It is said in the Lectures, that M. Broussais does not believe that any of the medicines employed with this view go directly to the organs they seem especially to affect: the latter are acted on solely by their sympathetic connection with the stomach, which produces different effects on different parts, according to their peculiar sympathetic relations to it:—Exactly the opinions of Dr. CHAPMAN, of Philadelphia.

It now remains for us to show how far the foregoing principles will explain the phenomena of some organic diseases, which, when seated in certain organs, have received peculiar names,—as phthisis, scrofula, &c.; we shall also give a general account of M. Broussais' theory of scurvy; and then we shall attend more particularly to the *Lectures*, for the purpose of illustrating some of the principles developed on former occasions respecting gastric inflammations.

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PERITONEAL INFLAMMATION.

1. *Histoire des Phlegmasies, ou Inflammations Chroniques.* Par F. J. V. Broussais, M. D. &c. Chapitre iv. De L'Inflammation du Péritoine. (Vol. II.)

2. *Peritonite:—Inflammation du Péritoine.* Par M. M. Gasc. [Dictionnaire des Sciences Medicales, Vol. XL.]

3 *Researches on the Pathology of the Intestinal Canal.* By John Abercrombie, M. D. &c &c. [Edinburgh Medical and Surgical Journal, No. LXIII.]

4 *A practical Treatise on various Diseases of the Abdominal Viscera.* By C. R. Pemberton, M. D. &c. &c. &c. 4th Edition, revised and corrected. London, 1820.

5 *Effets de l'Inflammation sur le Péritoine, reconnus par les Ouvertures de Cadavres.* Par M. M. Montfalcon, M. D. &c. &c. [Dict. des Sciences Med. tom. 40.]

[From the London Medico-Chirurgical Review, for Sept. 1820.]

It is in vain to look for *minute* pathological anatomy beyond the circle of the last twenty years. Candour also obliges us to confess that (with a very few honourable exceptions)* it is not in this country we need look for it at all. This statement will highly offend the national pride and prejudice of those whose researches are limited to their own case-books, and who cannot conceive that medical superiority may exist beyond an arm of the sea, or a fresh-water stream. We believe we have already exhibited proofs that our continental brethren have out-stripped us in pathology, and we shall steadily persevere in pourtraying the salutary examples of unwearied industry which they have set us, however bitter to swallow, or hard to digest, the potation may be.

No practitioner is unaware of the great importance and danger of abdominal inflammation; but even to this day, inflammations of the different tissues are too often confounded together, without due regard to their anatomical, physiological, and pathological peculiarities. How common is it to confound inflammation of the peritoneum with that of the organs which it covers, and to talk of isolated affections of the stomach, intestines, womb, &c. under the designations of gastritis, enteritis, hysteritis, as though the inflammation attacked, at one and the same time, the whole of the tissues composing those viscera! Yet nothing is more certain than that almost every accute inflammation of the organs abovementioned, begins in a single tissue of their structure, with corresponding symptoms, and spreads thence to other tissues, with more or less rapidity, according to the violence of the disease, and the mode of treatment, accompanied also by a train of phenomena indicative of the new structures successively invaded.

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* Particularly Dr. Baillie's works,

In by far the greater number of those cases termed gastritis and enteritis, the inflammation is pure peritonitis at the beginning, and the disease takes its name improperly from the organ over which the principal inflamed portion of peritoneum is spread;* though, in such instances, we rarely or never find the inflammation bounded by the limits of a single viscus, but wandering undefined over a greater or less extent of the peritoneal tunic. Every one now acknowledges that the pleura is frequently inflamed where the parenchymatous structure of the lungs escapes; and it is precisely so with the peritoneum, excepting that in the latter there is more danger than in the former. There is, indeed, a very close analogy between pleuritis and peritonitis. They begin, like all other acute diseases, with chilliness, succeeded by heat, fever, &c. They show the peculiar character of *serous* inflammations—extremely acute pain, wandering or fixed, accompanied by a distressing sense of internal heat. As in pleurisy the pain is complained of in a single point, although the whole sheet of pleura be inflamed; so, in peritonitis, the pain or tenderness is generally referred to a particular part, even when the phlogosis is very extensive.

> "As cough and expectoration. (says M. Gasc) take place in pleurisy, so nausea and vomiting are common attendants on peritonitis. As pleurisy is under atmospheric influence, and sometimes appears to spread epidemically, so does peritoneal inflammation. As hydrothorax frequently results from pleuritis, so does ascites from peritoneal inflammation. Pleurisy sometimes terminates in suppuration, and produces empyema; peritonitis occasionally gives rise to a puriform effusion that almost invariably proves mortal. In pleuritic inflammation, coagulable lymph is thrown out, and adhesions are formed; in peritoneal inflammation, the intestines are often glued together by the same substance." *Dict. des Sciences Med. tom.* 40. *p.* 497.

* This observation of Broussais seems confirmed by the later writings of Dr. Abercrombie. "Inflammation of the peritoneum, says Dr. A. may occur in a more limited form than in the disease which I have now described, and, according to the seat of it, *may assume the appearance* of disease of various organs, as the bladder, the kidney, the liver," &c. 167.

After these preliminary observations, we shall proceed systematically in drawing up a synthetical article on the important disease now under review.

I. ETIOLOGY.

The *predisposing* causes of peritoneal inflammation are involved in obscurity, and may depend much on idiosyncrasy. Among these, however, have been ranged, plethora, irritable habit, abuse of inebriating liquors, ultra-excitement of the passions, cold seasons of the year, damp habitations.

The *exciting* causes are various; some are mechanical, some chemical. Thus, compression of the abdominal viscera, blows or falls on that region; in short, every contusion or general commotion of the abdomen may determine a focus of irritation, and ultimately inflammation on its peritoneal lining. Mechanical irritation also results frequently from internal friction or pressure, as of the gravid uterus, extra-uterine conceptions, enlarged ovaries, or other morbid growths within the abdomen. M. Broussais considers violent and long-continued corporeal exertions, violent and repeated contractions of the abdominal muscles in vomiting, the centripetal oscillations of the blood in the cold stages of intermittents, and strictures of the colon or rectum producing unnatural contortions and friction of the intestines on one another, as causes of peritoneal inflammation.

Among the chemical internal irritations may be placed all extravasations not quickly absorbed, as blood, bile, chyle, urine, fæces, and perhaps the morbid serous secretions of the tissue itself. But the grand causes are to be sought in the action of a cold atmosphere on the surface of the body, the application of wet or cold, especially to the feet, when the person is in a state of corporeal inaction, the neglect of changing wet clothes, the drinking of cold liquids when the body is heated, and whatever suddenly interrupts certain functions of the system, as the suppression of perspiration, the lochia, and the menstrual discharge.

Over the causes which produce epidemic dispensations of this disease, the same veil of mystery hangs, that conceals from our view the Etiology of other Epidemics. M. Broussais saw the disease epidemic, and apparently contagious among the French armies, in various parts of the continent—in Germany, Holland, and Italy. We have all seen puerperal peritonitis epidemic in our own country. The translation of rheumatic, arthritic, or erysipelatous inflammations from the joints or surface of the body to the interior tissues, is not to be overlooked by the observant practitioner, or ridiculed by the sceptical sciolist.

According to the force of the cause and the constitution of the subject, we have peritoneal inflammation of the acute or chronic form. These forms may not be very distinct, when they are passing to or from one another; but, at all other times, they are sufficiently distinguishable, and accompanied by marked peculiarities and features.

II. Symptomatology.

Acute Peritonitis is generally ushered in with horripilatio or cold chills, sometimes amounting to rigors, accompanied by malaise and weariness of the limbs. It not unfrequently happens, that this chilly stage continues for even one, two, or three days, before re-action takes place; at other times, however, this cold stage is of short duration; and heat succeeds, more or less pungent, with head-ache, constriction of the epigastric region, and frequent, hard, concentrated pulse. The face is usually pale, and often covered with cold clammy sweat; but the abdominal pains produce certain muscular contractions of the face, which give the countenance a peculiar sharpness of feature, characteristic of this disease. Sometimes there is a degree of livor of countenance; at others, it is animated with an air of agitation; or fixed, and determined. The intellectual faculties are generally performed soundly till the last, with occasional delirious wanderings, and convulsive movements of the head and limbs. To the foregoing symptoms we may add sleeplessness, thirst, a sense of stupor, with coldness of the extremities. Little can be drawn from the state of the secretory and excretory functions, which vary much, according to the intensity of the disease, and other circumstances of the patient. Such are the *general* phenomena; the *local*, or characteristic symptoms, deserve a separate consideration.

Peritonitis being declared, the abdomen becomes painful, sometimes to such a degree, that the least pressure is insupportable, and even the weight of the bed-clothes is distressing. This pain is very different from that attending dysentery, being infinitely more acute, and constant. It also differs from that attending phlogosis of any particular abdominal organ. In peritonitis the pain is sometimes fixed, and then it appears confined to a single point; at other times, it is general or wandering, according to the extent of the inflammation. The patient dare not lie in any other position than on the back, and is afraid of moving, on account of the exasperation of pain attending every motion. Both tension and swelling may now be detected in the abdomen, partly from emphysema of the subjacent cellular substance. Hiccup, nausea, and vomiting supervene, with anxiety, frequent and laborious respiration, especially inspiration, from the descent of the diaphragm on the abdominal viscera. There is sometimes diarrhœa, but generally constipation of the bowels.*

Such are the open forms of the disease. But the symptoms above enumerated are often modified by age, constitution, season, and other circumstances. Thus, in some subjects, of feeble powers and advanced in age, peritonitis will creep on without fever; nay, without local pain—and yet the disorder will go on to complete disorganization of the peritoneum, or such an effusion of serous fluid as gives the complaint the character of ascites. In some subjects, the thickness of the muscles and parieties of the abdomen renders the pain of pressure scarce perceptible. In such case, M. Broussais directs us to make *lateral* pressure towards the centre of the abdomen.

' "Elle (pression) était plus difficile à supporter quand on la faisait latéralement, en la derigeant vers le centre. Ce signe est un des meilleurs pour faire découvrir les péritonites obscures." *Vol. II. p.* 413.

To this symptomatology of the French authors we can add little from our countryman, Dr. Abercrombie. Indeed, if the reader will compare Dr. A's description of inflammation of the peritoneal coat of the intestines, in pages 666 and 667 of the Edinburgh Journal, he will find it, in many places, almost a literal transcript from Broussais, published twelve years ago. By this, we do not mean to say that Dr. A. copied from Broussais; but we think that he ought to have extended his *researches* a little farther, and noticed the investigations of so distinguished a pathologist as M. Broussais. These remarks will apply still more forcibly to the pathology than to the symptomatology of the disease under consideration.

In some epistolary communications, which the writer of this article lately had with an esteemed friend and able physician,† there are some passages which are highly worthy of notice.

> "Though we chiefly judge (says Dr. D.) of the degree of abdominal inflammation by the severity and constancy of the *pain;* yet a fatal disease may be going on, though the pain be far from acute, or only recurring at intervals. The grand criterion is the ability of bearing manual pressure; and *this* we are not to estimate solely by the complaint, but by the countenance also of the patient. Even gentle pressure causes a sudden retraction of the lips, and expression of pain, as if he were pierced by a sharp instrument. On the other hand, we are not

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* "Elle arrête (says Broussais) les excretions alvines. On conçoit qu'elles sont impossibles, lorsqu'on remarque que tous les efforts pour aller à la selle ou pour uriner, ainsi que les secousses dela toux, et de l'éternument, sont insupportable." *Vol. II p.* 492.

† Dr. Dickson of Clifton.

to overrate the tenderness, (though it is the surest diagnostic) by the wincing of the patient, especially if very irritable, or young, and afraid of being hurt—or if the bowels happen to be uneasy and distended with flatus at the time. The pulse is deceitful, and only to be regarded in conjunction with the other phenomena. Though the pain, tenderness, and other symptoms have subsided, yet this abatement is not to be relied on, so long as the pulse keeps up, particularly if the tongue does not clean, or after being so, is disposed to resume its coat; in such circumstances, there is great danger of relapse, from any dietetic indulgence, exposure to cold, or getting up too soon. Bearing the erect posture well, is certainly a proof of diminished tenderness; but the attempt should not be hazarded too early. When the pain returns at intervals, but is not of long duration, it is often difficult, particularly in young subjects, to know whether it is from unsubdued inflammatory action, or to be referred to griping colicky pains from the operation of medicine. Where we are in doubt whether pain be inflammatory or spasmodic, the safe plan is to treat it as the former. The bowels are generally obstinately closed during the first days of enteritis, with vomiting in proportion to the degree of anti-peristaltic motion, sympathy, or the extent, and spreading upwards of the inflammation. Even after free motions have been procured, constipation is very apt to recur, and the bowels are tardy and difficult to manage throughout the whole course of the disease."

This observation of Dr. Dickson accords with our own experience, and with that of all the best authors and practitioners. We cannot but regard the following sentence of Dr. Abercrombie, therefore, as tending to impress the inexperienced mind with a description which is, generally speaking, erroneous, and a principle which is exceedingly dangerous.

> "We have seen (says Dr. A.) the bowels obstructed; we have seen them natural; and we have seen them spontaneously loose: and under these varying circumstances, we have found the disease going on with equal certainty, and equal rapidity, to a fatal termination."
>
> *Ed. Journal.*

Those who have not seen much of peritoneal or abdominal inflammation, would naturally conclude that the above states were so nearly equal in point of occurrence, that nothing was to be thence inferred; whereas we appeal to the observation of practitioners, whether constipation is not as general a concomitant of *peritoneal* inflammation, as dysenteric purging is of inflammation of the mucous membrane of the intestines. Exceptions will occur to all general rules, of course; but really Dr. Abercrombie appears to us to have confounded in the above sentence, two very different inflammations—that of the internal and that of the external coats of the intestinal canal—requiring a very considerable modification of treatment. This error would be of less consequence, did it emanate from a weaker authority. As it stands, it is calculated to do harm; and hence our anxiety to combat it.

We may here cite the authority (no mean one by the bye) of Dr. Gregory, the present professor in Edinburgh.

"Enteritis (says he) is generally attended with costiveness; *when* the belly is open, it is a good sign." *M.S. Lectures.*

"Bleeding (says the same Professor,) is particularly necessary; but the great view is to keep the belly open. Whenever it is in a natural state, the danger is over."

Dr. Gregory warmly recommends laxative glysters, as superior to purgatives, by the mouth.

Dr. Pemberton's authority may be also quoted for constipation being a general attendant on enteritis.

"The bowels (says this distinguished Physician,) are obstinately costive; what is injected is returned unaltered; and what passes from the rectum unsolicited, is devoid of the ordinary smell and colour of fæces." *4th Edit. p.* 177.

The march of acute peritonitis is generally short.

"I have never (says Broussais) seen peritoneal inflammation, *accompanied by much pain and fever*, prolonged beyond the medium duration of inflammations of other serous structures—from ten to twenty days. I have remarked, that when the disease did not give way in that space of time to proper treatment, it proved fatal suddenly. I have never seen this inflammation pass from a state of violence to that of tranquillity, after going through the acute stadia, as we sometimes observe in inflammations of the chest, and of the mucous membrane of the bowels. Of the chronic cases of peritonitis which I have met, a few had pain and fever for about three or four days, at the utmost; but the majority of cases had crept on so insensibly, that no account could be obtained of the commencement of the inflammation." *Vol. ii.*

This inflammation may terminate by resolution, suppuration or effusion, gangrene, and chronic peritonitis.

Resolution. The termination by resolution generally takes place between the fifth and tenth day; sometimes the fifteenth or twentieth. It is announced by cessation of pain, fever, and other inflammatory symptoms; a re-establishment of function in the contiguous organs; a power of turning to one or both sides in bed; a disappearance of the nausea and vomiting; free evacuations from the bowels, kidnies, and skin; refreshing sleep.

Suppuration and Effusion. This is a frequent termination in fatal cases; and it is difficult to ascertain the precise period when pus or effusion is produced. There is generally a diminution of the abdominal pain, with a sense of weight and oppression; irregular chills; a softness in the pulse; paleness of the countenance; coldness of the extremities—death.

In peritoneal suppuration we have no ulceration or other breach of continuity in the membrane. The purulent matter appears to be thrown out by a kind of exhalation or secretion, as the ordinary serous fluids. The colour and consistence of the purulent matter are very various; being reddish, greenish, or white, like milk, with shreds of membrane, and albuminous floculi floating in it.

The internal surface of the peritoneum in health, is always secreting a serous halitus. When inflamed, the gorged state of its vessels will sometimes cause a sanguineous effusion, instances of which are related by Broussais. But more commonly, in peritoneal inflammation, there is a preternatural serous secretion, of various colours and consistencies, which accumulating in the abdomen, increases the irritation and aggravates the inflammation.

The absence of redness in the peritoneum, on dissection, is no proof that phlogosis did not exist previously; for Bichât has well observed, that death having removed all irritation from this membrane, its capillary vessels may so far shrink, in some cases, that no turgescence or redness is visible, in the same manner as erysipelas, morbilli, scarlatina, &c. disappear from the surface of the body after death.

Gangrene. Of all inflammations of *serous* membranes, peritonitis, when violent, is most disposed to run into gangrene. The phenomena indicative of this termination are sufficiently obvious. A sudden cessation of the abdominal pain; smallness of the pulse, which becomes concentrated and intermitting; prostration of strength; and facies hippocratica, announce the approach of death.

Another termination of acute peritonitis, is so important that it must occupy a considerable share of our attention.

CHRONIC PERITONITIS. When acute inflammation of the peritoneum continues beyond the fifteenth or twentieth day, it becomes chronic; but this last form of the disease is by no means always preceded by acute peritonitis. It often steals on, from the same causes as were before enumerated, in a slow and insensible manner; especially when the patient is advanced in age, or debilitated in constitution. Particular occupations, which cause pressure on the abdomen, predispose to, if they do not excite this disease; and, in its etiology, may be ranked unhealthy localities; cold and moisture; poverty; prolonged residence in hospitals; fatigue; forced marches among the soldiery; unwholesome food acting as an irritation on the abdominal viscera; protracted intermittents; every kind of slow effusion into the cavity of the peritoneum.

Its approach is so insidious, (when it does not succeed the acute form) that we never see it at its commencement; consequently, we can only describe its early symptoms by watching the transition from the acute to the chronic forms of the disease. The patient experiences a kind of constant morbid feeling in the abdomen, rendered more obvious by pressure. It is the property, however, of *chronic* inflammations of the serous membranes to excite very little acute pain, " being rather acute tenderness than actual pain."—*Abercrombie.*

Baglivi, Morgagni, and others have seen the pleura, a membrane so sensible in acute pleuritis, completely disorganized, and even profoundly suppurated, in chronic inflammation, without the patient having ever complained of the least pain. It is, therefore, highly imperative on us to watch the patient after an attack of acute peritoneal inflammation, and not be thrown off our guard by the cessation of suffering. Sometimes, however, when chronic succeeds acute peritonitis, the patient complains of a fixed pain, like a stitch, at the epigastrium, which is aggravated by any sudden movements, unusual exercise, sneezing, &c.

If we examine the abdomen, a slight tumefaction, and glossiness of the surface will be perceived, especially towards evening. Dr. Pemberton observes, that the patient—

> " Only complains, after fatigue, of a certain degree of tightness, and pricking soreness across the abdomen, from one os ilium to the other. This state will continue, with little variation, for many months; during which time the operations of the bowels will sometimes proceed naturally, though more commonly the patient is costive. There is no tension of the skin of the abdomen, as in the acute species: on the contrary, I have more than once observed the skin and abdominal muscles to sit loosely upon the peritoneum, which has given a sensation to the touch, as of a tight bandage underneath, over which the skin and muscles may be said (as it were) to slide. The patient always complains more of tightness than of pain; and as this tightness is much increased by any congestion in the bowels, the relief which he experiences from evacuating their contents, leads him to attribute his sensations to an habitual costiveness." *Fourth Edition, p.* 11.

The appetite is often preserved, and the digestion but little deranged, in which cases, we may conclude, that the peritoneum reflected over the stomach, is not very deeply involved in the disease. At other times, however, there is vomiting, but this is not to be considered a pathognomonic symptom of chronic peritonitis. Broussais mentions a sensation, as though a ball were rolling about in the abdomen, and sometimes approaching the throat; this he attributes to the agglutination of the intestines, which form, with the gorged mesenteric glands, a round and mobile mass in the belly, often without any effused fluid.

The general, or symptomatic phenomena of chronic peritonitis are very obscure. The pulse is natural, except towards evening, when it becomes quickened, with some augmentation of heat, a little colour on the cheeks; and some dyspnœa and cough, when the patient lies horizontally.* These symptoms give cause to apprehend, that some effusion is going on in the abdomen, and the suspicion is strengthened by the appearance of any œdema of the ancles, and paucity of urine. Constipation of the bowels is not so common in the chronic, as in the acute peritonitis. Diarrhœa occasionally takes place towards the close of the patient's life.

The *Diagnosis* is sometimes extremely obscure in this disease. When the case is unequivocal, the prognosis is almost invariably unfavourable. In short, "when the disease has made any progress," says M. Gasc, "it is rare that we have not *tubercular depositions*, more or less abundant, in the peritoneum, and the matter of which they are formed, being little susceptible of absorption, is, in itself, ultimately, the cause of death."

> "En effet, dans la maladie parvenue à ce degré, il est rare qu'il n'ÿait pas, dans le tissu du péritoine, des *depots tuberculeux* plus ou moins abondans, et la matiere qui la forme, étant peu susceptible d'etre absorbée, serait, à elle seule, à la longue, une cause de mort."

Our readers will easily see, that the French authors, under Review, are describing evidently Dr. Baron's "tuberculated accretions of the serous membranes;" with this difference, that they place the disease to the account of chronic inflammation of the peritoneum—he to an hydatid origin, independent of inflammation. Time must ultimately decide between them. In the mean while it is necessary, in obedience to the good old maxim, "suum cuique," to state, that neither the French nor the English authors have the merit of originality in ascribing the origin of tubercles to hydatids. That sagacious pathologist, MORGAGNI, has distinctly insisted on this identity, in several places; but the following instances are sufficient for our purpose.

> "The observations which I have very frequently made upon the tunica albuginea and vaginalis of the testis, induce me to believe, that the membraneous laminæ of the hydatids, or of the coats in which they are formed, after they have, by rupture, poured out their fluid contents, first contract themselves and their vessels into the form of a caruncle; and, unless a fresh fluid continue to flow thither, are finally so indurated, and dried up, *as to represent those white and hard tubercles of a roundish figure, some larger in their size, and some less, as the hydatids had been, with which the internal surface of the peritoneum, and the production of it over the external surface of the spleen and intestines were beset.* Postquam disruptæ hunc effuderunt, se suaque vascula in carunculæ forman primum contrahere, et nisi novus illac humor effluere pergat, indurari, et exsiccari denique sic, ut alba illa, et dura subrotunda tubercula representent alia aliis, ut hydatides fuerant,

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* Dr. Pemberton says, he has not observed these evening accessions of febrile symptoms; but rather a langour, with a pallid, and doughy appearance of the face.

majora aut minora, qualibus in descripta virgine intima peretonei facies, ejusque productio, &c." *Epistle* 38, *Article* 35.

Again, in the same Epistle, Morgagni observes—

"Finally, read over again what I have formerly written to you,* of hard granules, or tubercles being prominent on the internal surface of the peritoneum and pleura, and you will certainly find *the series of changes that I have described.* It happened some years ago, that, in a woman who had been taken off by an ascites, the external coat of the intestine was found to be distinguished with very frequent tubercles. When I first examined them, they resembled small turgid lenticular glands; but they were without an orifice, and solid, and seemed to be made up neither of glandular, nor of a fleshy substance; but to be of a middle nature, as it were, betwixt both. I judged that I could determine on nothing more probable, in regard to them, than to suppose, that they were the *remains of ruptured hydatids contracted into themselves.* Censui nihil veri similius a me posse statui, quam si disruptarum hydatidum reliquias esse conjicerem, in se contractas, ut siccæ esse possent, et duræ."

The above, and many other passages prove, that Morgagni maintained the hydatid origin of tubercles; but this author does not assent to the doctrine of Wharton and others, that these hydatids were formed by certain "interstices of the lymphæ-ducts, for (says he) it is long ago that Ruysh admonished us of a great number of hydatids being found in the placenta uteri; sometimes, as I have also seen, and in other parts, in like manner, wherein no lymphatics are found." *Epistle* 38, *Article* 38.

If Morgagni then has anticipated our countryman, he is, at the same time, a strong authority in favour of Dr. Baron's theory.

The duration of chronic peritonitis is extremely variable—it may destroy the patient in a few months; and he may linger for years under it. Twelve years ago, M. Broussais pronounced it incurable. Since that time, however, more extensive experience has presented to this able physician many instances of recovery.

III. MORBID APPEARANCES IN ACUTE PERITONITIS.

The results of numerous dissections have long proved, that the peritoneum may be partially or totally inflamed, without any similar affection of the subjacent organs. In numerous instances the muscular and mucous tissues of the stomach, intestines, and other hollow viscera, were found perfectly sound, even when the peritoneal coat was gangrened. In general, the traces of inflammation are more and more strongly marked, according to the duration of the disease, and its degree of violence. Sometimes the vessels of the peritoneum are seen finely injected; at others, the redness is scarcely perceptible, owing to the reflux of blood from the capillaries, in articulo mortis.

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* Epistle 16, No. 30; and Epistle 22, No. 186.

Bayle, Broussais, and others have noted the following morbid appearances after *acute* peritonitis. 1mo. Redness, thickenings, and even eschars, which penetrated to the mucous membrane of the peritoneum. 2do. Solid exudations, in form of false membranes, lining the serous surface of the peritoneum, but without organization. 3to. A liquid exudation, sometimes turbid, sometimes limpid or reddish. More or less of serous and purulent fluid was always found in the abdominal cavity, bathing the surface of the intestines. 4to. M. Broussais also found red clots, sometimes thin, sometimes thick, spread over, in form of membrane, the peritoneum, which was reddened and thickened underneath. Blood itself has been found effused from the peritoneal lining of the abdomen, without any apparent breach of vessel or substance.

In most cases, where acute peritonitis has been cured, and the patient soon afterwards died of other diseases, adhesions were found, similar to those occasioned by pleurisy.

The appearances on dissection, after *chronic* peritonitis, are very different from those above enumerated, as resulting from the acute form of the disease.

In chronic peritonitis the peritoneum acquires a greater degree of morbid thickening, and the inflammation appears to have penetrated to the different structures of the subjacent organs.

In chronic peritonitis the peritoneum acquires a greater degree of morbid thickening, and the inflammation appears to have penetrated to the different structures of the subjacent organs. The effusion is serous, limpid, or greenish, or reddish, with white, purulent-looking filaments floating about. Occasionally we find spread over the whole extent of the peritoneum, or over some of the envelopes which it lends to various organs, a crop of granulations, pisiform, white, and not unlike certain miliary eruptions of the skin. Bayle, who has examined these granulations very minutely, observes that, in a subject who presented them to a great extent, he could scrape them off very easily with the scalpel, in many places, and *there* the peritoneum underneath appeared perfectly sound. In other parts, however, they could not be raised from the membrane without tearing the latter. Broussais has also related numerous cases where the peritoneum was larded, and immensely thickened with crops of tubercles.

"I have also (says the same author) seen a species of vesicles, similar to hydatids, formed of the most limpid serum, under a transparent sheet of membrane which had been elevated thereby."

"J'ai vu des especes de vésicules, semblables á des hydatides formées par un amas de la sérosite la plus limpide, sous un feuillet transparent qu'elle avait soulevè."

Broussais observed that thin men, of a lymphatic temperament, and who had been weakened by any disease, particularly by protracted intermittents, were the most subject to these tuberculated disorganizations of the peritoneum.

The subjects opened by M. Laennec presented the following morbid appearances in the abdomen. On perforating the peritoneum a quantity of gas rushed out, which had the odour of sulfurated hydrogen.* The intestinal canal was found singularly conglomerated, and agglutinated into one mass, and partly covered by thickened and adherent epiploon. In some cases the intestines were entangled and twisted upon each other, and glued together by false membranes. The peritoneum itself was thickened, disorganized, and tuberculated, in the manner already described, with effusions of various kinds in the cavity of the abdomen.†

It is evident that these chronic disorganizations of the peritoneum, cannot long exist without affecting the structure, and consequently the functions of the various abdominal viscera. Hence the digestion, chylification, biliary secretion, &c. all become deranged, and present a complication of distressing phenomena. But not only is the disease propagated to the organs over which the peritoneum is spread—it is not seldom extended to the serous tissues of other cavities than that of the abdomen. And here we shall detail a case which will set in a very clear point of view the superiority of English *practice* in inflammatory diseases, over that of our continental brethren, notwithstanding the light which pathological anatomy has diffused over the subject in France particularly.

" *Case.* Gothard Lich, aged 25 years, a fusileer in the 2d Regt. of Hessian Infantry, was received into the hospital, at Dantzic, on the 3d of April, 1812. On the 4th he was seen by M. Gasc; his skin was very hot, with intense pain of forehead and occiput; face and eyes red; tongue white; respiration laborious; acute pain in the left side of the thorax; constipation of bowels; urine scanty and high coloured; burning heat in the soles of the feet; pulse strong, frequent and full. The patient was robust, and had experienced a well-marked shiver the evening before, when mounting guard. M. Gasc prescribed a bleeding from the arm, with a *nitrated decoction of marsh mallows, and emulsions with some cooling powders!* (no purgative was ordered.) Besides the above means, fomentations were applied to the abdomen and chest. The patient experienced a temporary relief; but in the evening an exacerbation came on, and the night was spent in great agitation. (No repetition of bleeding was ordered to meet the rising storm of inflammation! No! one bleeding in one day was thought quite enough!)

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* See the ingenious observations of Dr. A. B. Granville on this subject, in a paper read before the Royal Society, and partly published in Professor Brande's Journal.

† We cannot help lamenting here the exceeding barrenness of Dr. Abercrombie's *pathology* in the disease under consideration. It is given in two or three lines. "On dissection we find uniformly effusion of coagulable lymph; in some cases very extensive, and frequently effusion of a turbid or puriform fluid, sometimes in considerable quantity. Gangrene is rare." 167. The case-book of no *private* practitioner (however ample his range of practice) can furnish sufficient *pathological* details. It is in great civil or military establishments, where dissection is universal and unobstructed, that we are to find minute and comprehensive pathology. This article will exhibit so forcible an illustration of the above assertion that we shall say no more on the subject here.

"April 5th. Venesection was repeated, and the other medicines continued. The day and succeeding night more calm.

"6th. The fever appearing mitigated, and there being some gastric symptoms present, M. Gasc ventured on the exhibition of a little cream of tartar, which procured two or three motions.

"7th. The patient has had a bad night, with great heat and restlessness; the head painful and heavy; the eyes red and inflamed; the countenance animated; temporal arteries throbbing; tongue dry; skin arid; pulse quick and full. (Who, on this side of the Channel, would not have bled profusely from the arm or temporal artery in this state of things?) Leeches were applied to the temples, with some relief; barley ptisan, with nitre, and oily emulsions, alternating.

"8th. Restless nights; symptoms as high as ever; heat insupportable; mouth dry; stupor; alteration of the features; oppression of the chest; delirium; tension and swelling of the abdomen. *Ptisans and emulsions continued. Cold applications to the head; emollient glysters.*

9th. Delirious all last night—some remission this morning; yet the pulse is strong, frequent, and irregular, with stupor, dry tongue, and intense thirst; abdomen distended and tympanitic, with tenderness on pressure. Fomentations, nitrated decoctions; and, to please a Brunonian brother officer who was present, *camphor, æther, valerian, &c.!* Towards evening (as might easily be anticipated) an exacerbation, ushered in by a slight rigor.

"10th. Delirium still higher last night than during the preceding, and the patient was constantly putting his hands up to his head, as though that were the chief seat of the complaint; difficulty of breathing; *pulse frequent and strong.* Desisted from the Brunonian stimuli, and applied leeches to the head. The symptoms were alleviated, and the patient passed an easy day and night.

"11th. *Spontaneous* evacuations from the bowels, with relief; but towards evening all the violent symptoms returned."

We have not patience to relate the daily mismanagement of this case. Some calomel and digitalis were given, with temporary relief; but no bleeding, blistering, or purging were ever dreamt of, and this fine young man expired on the 19th, after unheard of sufferings!

"*Dissection.* Much blood in the skull; sinuses gorged; vessels of the pia mater injected; pia mater in some places inflamed, in others exhibiting traces of real suppuration; not much water in the lateral ventricles, but the fourth ventricle full of serous effusion.

"When the thorax was opened, much bloody serum rushed out;

the pleura costalis and pulmonalis of the right side glued together, with portions inflamed and suppurated. Substance of the lungs sound; but the cavity of the pericardium filled with purulent serum. The heart every where covered with a yellow membraniform exudation, two lines in thickness. The internal surface of the pericardium covered with a similar coat. The peritoneum throughout its whole extent, both where it lines the parietes of the abdomen, and is reflected over the various organs, was red, and injected with blood. The cavity of the abdomen itself contained a quantity of whitish purulent serosity, bathing the viscera and peritoneum. Liver enlarged and gorged with blood. The mucous surface of the stomach and bowels perfectly healthy."

The above case should be written in letters of gold, and hung up in every ward for acute diseases, in hospitals and infirmaries; nay, if it were placed in every medical man's study, and glanced over before he went out on his rounds, it would prove an invaluable beacon to guide him clear of Brunonian rocks and quicksands. Such effects of disease, fortunately, could not be seen in this country, where we are not such disciples of Hippocrates, and the "medicine expectante," as to hope for Jupiter to come down and drag our waggon out of the mire, while we ourselves stand by with our arms folded. An English patient told a French physician, that "in his [the Englisman's] country they treated the patients as though they were horses."* The able physician to whom this was said (our esteemed friend Dr. Ducamp) will peruse the above case, and these reflections on it: and we appeal to his judgment and candour, whether his countryman would not have acted more wisely in putting this *equestrian* discipline in force with his patient, rather than treat him as though he were composed of such machinery as would not bear the least interference of art.

We confidently hope that the free intercourse which now subsists between these islands and the continent, will mutually enrich the profession on both sides of the channel. We candidly acknowledge our inferiority in *pathology*, and shall not be ashamed to profit by the researches of our neighbours. Let them evince similar wisdom, by giving the energetic *practice* of British physicians a fair trial; and we prognosticate that their ultra-adoration of Hippocrates will diminish.

IV. TREATMENT OF ACUTE PERITONITIS.

Here we shall, in a great measure, abandon the writings of our foreign brethren, for very obvious reasons, and confine ourselves to our own country; nay, we shall draw the materials of this section of the article principally from our own observations and ex-

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[*] "Dans mon pays, on traite nos malades come des chevaux."
Journ. Gen. de Med. February 1820.

perience, which are often serviceable in enabling us to judge between cabinet speculations and clinical deductions—no unimportant function of a reviewer, and in which, some medical critics of the present day evince a plentiful lack of discrimination.

We have taken various opportunities, in this Journal, of drawing the attention of our brethren to the intimate connection between the nervous and vascular systems; or, in other words, between irritation and inflammation. In peritonitis, it is particularly desirable to remove, as much as possible, every source of pain and irritation, by derobing the patient of all articles of clothing which might compress the abdomen, by enjoining quietude, by an easy position in bed, by pure and mild air of the apartment, and by the prohibition of all intrusive and useless visitations. These are necessary precautions, which are too often overlooked by the inexperienced; but which mark the practitioner of science and observation.

If, on examining the abdomen, we find local *pain on pressure*, whether general fever has been lighted up or not, we shall seldom act wrongly, by attributing that pain to inflammation, and by treating it as such. The measures pursued in the phlegmasiæ of this country are few in number, but decisive in effect. Although the efficacy of blood-letting, especially in peritonitis, is proportionate to the earliness of its employment; yet we do not see any good reason why it should not be put in force at any period or stage of the disease, *while inflammation exists.* If inflammation be on the point of terminating in gangrene or effusion, what will prevent these, if blood-letting do not? The patient may not bear the same measure of evacuation at a late as at an early stadium of the complaint, but the indications are precisely the same at both periods; viz. 1mo. To lessen the force of the heart, and the fulness of the general vascular system. 2d. To relieve the vessels of the particular part inflamed, of their overplus of blood and irritation. General and local bleedings are the grand means of effecting these objects; but they are not the sole means.

As we know that peritoneal inflammation may be going on insidiously, without much affection of the general system, we ought rarely to commence in any other way than by venesection; and that carried to the extent of relieving local pain, or inducing syncope, or a strong tendency to it. Where the symptoms are previously equivocal, this measure very often gives a fuller development to the nature of the disease, and seldom, indeed, can any danger be apprehended from it, even where it may not have been essentially necessary. The second measure is *local* detraction of blood, by means of leeches applied in considerable numbers over the abdomen, and, if prejudice will permit, to the hæmorrhoidal or vaginal vessels. It is at the moment that the first ease is experienced from general and local bleeding, that the mucous membrane of the intestinal canal is to be excited to copious secretion and complete detrusion of its contents. Here then we differ, *toto cœlo*, from Dr. Abercrombie.

> "We have seen no reason (says he) to suppose that the retention of fæculent matter was injurious in the one case, or that the copious evacuation of it was productive of the slightest benefit in the other. On the contrary, there are facts which must lead to a suspicion that the action of purgative medicine upon the intestinal canal, when it is in a state of inflammation, rather tends to increase than diminish the disease."*

Were we called to a man with a fixed pain in the abdomen, constipation of the bowels, gastric irritability, fever, and other symptoms indicative of enteritic inflammation, and *then* prescribe purgative medicines without the preliminary and preparatory measures of general and local detraction of blood, we should expect the results which Dr. Abercrombie alludes to. But surely, this is a very insulated or oblique view of the subject. For what reason do we employ active purgation in the stages of *thoracic* inflammation? To lessen the whole mass of circulating fluids, and reduce the general action of the heart and vascular system. That purgation does this, we appeal to clinical experience. Now, in abdominal inflammation, provided the *mucous* tissues are not inflamed, purgative medicines excite the secreting vessels, not only of the whole internal surface of the intestines themselves, but of the glandular organs whose excretory ducts open into the primæ viæ, and thus powerfully deplete *locally*, the vascular system of the abdominal viscera.

When that portion of peritoneum reflected over the intestines is inflamed, but where the villous coat is unaffected, we hesitate not to assert, from personal experience, that constipation of the bowels will, in nine cases out of ten, be a feature of the disease; and in such cases, we maintain, that to excite the natural action of the mucous membrane, immediately after proper vascular depletion, is a powerful mean of checking the said peritoneal inflammation; in the same way that a free expectoration from the mucous membrane of the lungs relieves the vascular turgescence and inflammation of the parenchymatous structure or pleural covering of the same organ, as every practitioner must have repeatedly remarked. And here we appeal to the experience of our professional brethren, whether they have observed that patients generally complain of aggravation of the symptoms after the operation of purgative medicines, as Dr. A. states? For our own parts, we have generally observed the reverse of this take place, when purgation was effected in the manner, and with the preparation above described.

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* Edinburgh Journal, April 1820, p. 179.

Dr. Parr, the able author of the London Medical Dictionary, after thirty years' experience, states, that in enteritis

> "The salutary termination is by a discharge of fæces. If this can be obtained, the patient is safe; but unless free, copious, and truly fæculent stools are procured, the most promising appearances, in every other respect, will deceive." *Dict. in verbo inflam. intest.*

It must also be remembered, that inflammation of the peritoneal and muscular coats of the intestines has a natural tendency to produce spasmodic contractions of their calibre, and thus lock up whatever fæcal matters may be contained in the bowels, giving additional cause of irritation. The reduction of this spasmodic contraction by blood-letting, warm fomentations, glysters, or even narcotics, and the subsequent action of purgatives, all tend to relieve pain and check inflammation, as we have seen in numerous instances.

Dr. Abercrombie is neither singular nor original in his anti-purgative doctrines in peritoneal inflammations. Broussais thinks purgatives are only proper towards the close of the acute stage, "because the vermicular contractions which they excite in the intestines, must increase the morbid sensibility of the peritoneum." But knowing the inertness of the vascular depletion among our continental brethren, we cannot attach much importance to their therapeutical precautions. Broussais admits the propriety of gentle anodynes, when the force of the reaction is a little subsided.

The success which has attended the administration of oil of turpentine in puerperal peritonitis, first recommended, we believe, by Dr. Brennan of Dublin, is a proof of the power of purgatives in this disease. The turpentine is not only a potent cathartic, but excites powerfully the whole mucous membrane of the intestines, and thus derives the morbid irritation from the peritoneal tunic to a secreting surface, where it is carried off by the increase of secretion itself. Oil of turpentine and castor oil form a very useful combination for exhibition in this disease.

By these observations in favour of purgative medicines, in acute peritonitis, we do not mean to lessen the absolute necessity for decisive vascular depletion, general and local, previously to their administration. On the contrary, we urge the propriety and priority of these means, recommending the use of purgatives as an auxiliary measure. Our usual practice, indeed in this dangerous disease, is, first, to order general blood-letting till the pain is relieved, on pressure, or syncope produced; and while the local detraction of blood, by numerous leeches, is going forward, we order a grain or two of opium, or six or eight of extr. hyoscyami, combined with five or ten of calomel, and six or eight of ex. col. comp. to be taken. After the local bleeding, and a couple of hours after the above medicine has been swallowed, we endeavour to set the bowels in action, either by neutral salts, castor oil, or laxative injections. Reiterated observation has proved to us the utility of combining an anodyne with the first cathartic, and especially with the calomel, as it tends to prevent or allay gastric irritability, intestinal spasm, and irritation, thereby insuring a more copious fæcal evacuation afterwards, than would otherwise be procured.

We observe in Dr. Gregory's MS. Lectures, the following passage, which is sufficiently in point.

> "Small doses of the sal. glauberi are better than the common purgatives; but as salts seldom sit easy on the stomach in this inflammation, it is necessary to join an opiate, *which does not stop the operation of the purgative, as one would imagine*, but only keeps the patient from vomiting." *MS. Lect.*

Dr. Pemberton's sentiments respecting purgatives in enteritis, general and local blood-letting being premised, are as follow:

> "If the stomach will bear liquids of any sort, a strong solution of magnes. sulph. in aq. menth. pip. with an addition of tinct. sennæ, may be directed in such quantities, and at such intervals, as the sickness of the stomach will allow. If, however, all liquids are rejected, we may direct an usual dose of calomel, in union with the ex. col. comp. every six hours, ad quartam vicem. In the intermediate hours, an injection of water-gruel, with common salt, may be employed. Purgatives are to be continued during the whole progress of the disease. *Fourth Edit. p.* 181.

It is very strange that this able and experienced physician should not have noticed what Dr. Abercrombie considers as a common occurrence in enteritis—a natural state of the bowels, and aggravation of the complaint by purgatives. We believe, however, that Dr. Pemberton is not very singular in this respect. Dr. Abercrombie appears to be fast falling into the error of converting exceptions into general rules.

We agree with Dr. Abercrombie, that the first blood-letting should be as early as possible, and carried the length of making a decided impression on the system; and also that, to prevent this advantage being lost, we should repeat the depletion, after a short interval, whenever the effect of the preceding one has subsided. If the venesection be thus *timeously* repeated, it will seldom require a large detraction to check the pain and inflammation; whereas, if the disease be allowed to acquire force in the intervals of depletion, it will not only require a large loss of blood, but that large loss itself will have less chance of bridling the inflammation than the timely small one, while it seriously reduces the vital energy of the patient. And this is an additional reason for keeping up a secreting action on the mucous membrane of the bowels, which saves the detraction of pounds of blood.

Dr. Abercrombie wisely cautions the practitioner not to lose sight of a patient with an inflamed vital organ more than an hour or two at a time, until the force of the disease be decidedly broken. Unless the violence of an internal inflammation be signally mitigated within the first twenty-four hours of active treatment, the eventual result will be very doubtful.

Dr. Abercrombie, and indeed the practitioners of this country in general, employ local blood-letting in abdominal inflammation with too sparing a hand. Not only should leeches, in great numbers, be applied over the abdomen, but to the anal and vaginal regions, the bites being encouraged to bleed as long as possible, by warm fomentations.*

If conveniences are at hand, the warm bath should succeed general and local blood-letting, not only as a means of equalizing the circulation, but of lessening pain, and promoting the effect of the purgatives. If the warm bath cannot be procured, reiterated fomentations, with decoction of poppy heads, chamomile flowers, and a proportion of spirit, should be applied to the abdomen, which will not interfere with the bleeding from the leech-bites. Broussais recommends, in addition to the tepid bath and fomentations, gentle friction over the limbs, with the hand or some other body supple and agreeable to the touch.†

After the violence of the inflammatory action is subdued by general and local blood-letting, laxatives, and fomentations, or the warm bath—*blisters* are important auxiliaries. Broussais recommends the first blisters to be applied to the thighs or legs, in order to keep the surface of the abdomen clear for leeches and fomentations; but when the acute stage is declining, or if the other measures seem to fail, then we are to cover the abdomen with a blister. We ourselves have not hesitated to blister the abdomen, as soon as a decided impression was made on the disease, by the other and more essential measures. Leeches, if subsequently necessary, may be applied, with great advantage, to the flanks of the abdomen, and to the anus.

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* An able friend of ours, in the case of a very delicate female child, seven and a half years old, had lately fifty-five leeches applied to the abdomen in the course of a very few days. The pulse, before the leeches were applied, could hardly be counted. After the first application of fifteen leeches, it fell to 140, with frequent intermissions, both then and subsequently When the violence of the disease was broken, the pulse remained five days, viz. from the sixth till the eleventh of April, stationary at 112. At this time, an ounce of castor oil produced several motions, in which were some olive-coloured lumps that appeared to have been long retained. The pulse now fell below 100, for the first time since her illness, " evidently showing (says he) how important a free state of the bowels is; for the pulse has risen or fallen, according as the bowels were confined or free."

† Dr. Hall, of Berwick, in a letter to Dr. Dickson, of Clifton, on the subject of peritoneal inflammation, observes, " in all active inflammations of this kind, the suddenly emptying the blood-vessels, generally affords such relief at first, as to give time for topical applications being afterwards made with advantage. I have found benefit from small

Of the cold applications recommended by Dr. Abercrombie, Dr. Kinglake, and several French writers, we have not any experience.

> "In a considerable number of cases (says Dr. A.) I have used, with evident advantage, the application of cold, by covering the abdomen with cloths wet in cold water or iced water, or by pounding ice in a large bladder."

The authorities for tobacco injection, in inflammation of the bowels and ileus, are exceedingly numerous, as the reader will perceive, by looking into Plouquet, (vol. v. p. 117) where, among others, De Haen and Fowler have recommended the measure. Without much experience in this remedy ourselves, we are disposed to unite with Dr. Abercrombie, in proposing to revive its use as a powerful auxiliary in the disease under consideration.

> "The great advantage (says Dr. A.) attending the use of it in enteritis is, that while it tends to move the bowels, and keep them free from distention, it is, at the same time, powerfully calculated [he ought to have said, "calculated powerfully"] to allay vascular action, and may thus assist in keeping down the inflammation."

Mr. Howship, in his late work, mentions his having seen three cases, "in which the patients had suffered extreme pain in the region of the bowels, and in which the prescriptions of physicians had availed nothing. Mr. Heaviside being consulted, and finding

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doses of ipecacuanha joined with calomel, where the alvine discharge is slow, provided the stomach is not in an irritable state; in which case, the addition of ol. ricini to a common enema, often answers the best purpose."

Dr. Dickson himself, in a letter to the writer of this article, observes, "I think it of the highest import, towards conducting the disease to a safe termination, to keep the bowels freely open by mild means, and by frequent injections; for I have repeatedly remarked the pulse to fall after a copious motion." He justly advises, of course, that the force of the inflammation be previously broken by decisive blood-letting, as we have already inculcated.

Dr. Pemberton, in his valuable work, states, "it is necessary that the bowels should be kept *constantly* open." He recommends castor oil or neutral salts.

that the stomach had rejected every thing taken, and that stimulating glysters produced no favourable effect, in despite of bleeding, warm bath, and almost every other means, desired Mr. Howship to try the fume of tobacco, injected cautiously, by the proper apparatus. A general commotion and rumbling noise in the bowels took place in all these cases, and were soon followed by copious evacuations of fæcal matter. The patients were saved."—*Practical Observations, &c. p.* 19.

Of the sedative effects of antimony on the vascular system, we dare not avail ourselves in abdominal inflammations, on account of the gastric irritability; but Dr. Abercrombie recommends the free use of digitalis; in cases where the pulse continues frequent after the local symptoms appear considerably subdued by bleeding, and consequently where there is danger of relapse.

A tympanitic state of the abdomen is certainly a formidable symptom in enteritis, and a very unfavourable omen. We have seen it, however, owing to a sudden extrication of gaseous fluid within the intestines, and removed by aromatics, friction, and assafœtida injections. Dr. Abercrombie has seen injections, with large quantities of cinchona, very useful.

There is a period, in some cases of abdominal inflammation, where the disease is just subdued, but where there is a kind of balance between recovery and gangrene. The pain will vanish, the pulse become weak, the vital powers appear to sink, and a coldness overspread the body. These symptoms are too often indicative of mortification; but every experienced practitioner must have occasionally witnessed cases of recovery, even from this alarming state. Here we must give wine; for if gangrene *have* commenced, no harm can ensue from the remedy; and if it have *not* commenced, the wine may happen to give a salutary stimulus to the nervous and vascular systems, when stagnation is on the point of taking place in the vital fluid, and where farther evacuations would be instant death. In some cases of this kind, however, the symptoms are so equivocal, as to render it exceedingly difficult to determine on the proper course to pursue.

"A lady, (says Dr. Abercrombie,) aged about 35, on the seventh day after delivery, was seized with violent pain over the whole abdomen, most severe across the stomach and towards the right side; much tenderness on pressure; urgent vomiting; great restlessness; respiration short and oppressed; pulse 140, and sharp. The pain was aggravated by inspiration, and by every motion of the body. She was bled and blistered, and took laxative medicine, which operated freely. After the bleeding she was very much relieved; could breathe without uneasiness; the vomiting subsided, and the pulse was much diminished in frequency: this was in the night. On the following day the pulse rose to 150; the breathing was quick, short, and oppressed; some vomiting; countenance anxious; there was neither pain nor tenderness of the abdomen, which was to the feel soft and natural; lochia natural. Wine was given in the quantity of a small glass every hour, and injections of beef tea, each containing ℥ ß of bark in powder, and sixty drops of laudanum. These were repeated as often as they were discharged, which was generally from one to two hours. After some hours the symptoms were improved. Next day the pulse was from 125 to 130; on the third day from 112 to 120. Thus she gradually recovered, having continued to take a bottle of wine in each twenty-four hours." *Ed. Journal*, *April*, 1820.

It is hardly necessary for us to observe, that the strictest antiplogistic regimen is essential throughout acute peritoneal inflammation. Saline draughts, in a state of effervescence, will be useful in allaying thirst and gastric irritability—and when food is necessary, the farinaceæ should long precede animal food, or any other kind of ingestion which produces much fœcal remains. Rice water for drink is very useful in convalescence, as it is nutritious but not stimulant; and as this disease leaves a strong tendency to relapse, the patient should be enjoined the strictest attention to abstemiousness, regular bowels, warm feet, and flannel next the skin, for a long time after every symptom has disappeared.

Treatment of Chronic Peritonitis. In the first edition of M. Broussais' work, he appears to consider chronic peritonitis as incurable; and M. Gasc, the writer of the article peritonitis, in the Dictionnaire des Sciences Médicales, gives a similar prognosis—"on peut dire que la péritonite chronique est presque toujours mortelle." Within the last twelve or fourteen years, however, M. Broussais has met with several cases of this disease which terminated favourably. He justly observes, nevertheless, that in many instances, chronic peritonitis is supposed to be cured when the disease is merely dormant for a time, and pretty sure to advance again with hasty strides. M. Broussais gives a satisfactory explanation of the general incurability of the disease; namely, that tuberculous and pultaceous matter is commonly deposited, during chronic inflammation of the peritoneum, between the layers of this membrane, or in the substance of the false membranes thrown out on its internal surface, which depositions appear to be incapable of absorption; and consequently, keeps up an irritation which feeds the disease. This tuberculous matter may, for a time, lie dormant, or create little inconvenience: but ultimately, it kindles up irritation and inflammation. It is difficult, however, to know the exact period when these extraneous matters are deposited, and therefore we should not be too abrupt in giving an unfavourable prognosis. M. Broussais thinks, that a patient's fate, in general, depends on the treatment during the first twenty or thirty days of the disease, though he does not deny that it is curable at a much later period. Indeed, where chronic peritonitis steals on, without having been preceded by the acute form, it is seldom we see the complaint during the period above mentioned.

In respect to the treatment, our first object is to ascertain if there be any remains of the acute or sub-acute forms of the inflammation; for in that case we must still employ a modification of remedies already described. And, indeed, where no acute peritonitis has preceded, we are to be ever on the watch for a supervention of such a state; and ready to combat it by active means.

Our next object is to lessen or soothe irritation and pain, which aggravate the disease and accelerate its march. The food should be of the very lightest kind, so as that but few fæces may be formed, and those should be daily carried off by the gentlest means, particularly by laxative glysters. It is evident that when coagulable lymph has been thrown out, and adhesions have taken place between the intestines themselves, or between them and any other parts, the action of purgatives must be productive of serious mischief. The case is here totally different from acute inflammation of the peritoneum, and before any disorganizations have taken place.

In this chronic or apyrectic peritonitis, we must endeavour to arrest the morbid process going forward internally, through the medium of the skin. The tepid bath fomentations, stimulating frictions, blisters, or even issues, should be successively employed, with or without leeches, according to the activity or inactivity of the internal inflammation.

As a serous effusion is a common consequence of this dangerous disease, and is ever to be dreaded, *diuretics* are important remedies, particularly the digitalis, united with some gentle saline aperient, as the acetate of potass, or soda tartarizata.

The following will be found a very powerful diuretic in many cases besides that immediately under consideration.

℞.	Acidi tartarici	℈j.	
	Sodæ carb.	gr. xxiv.	
	Infusi digitalis	fl. ℥ß.	
	Spir. ætheris nitrici . .	fl. ʒj.	
	Tinct. scillæ	♏. iv.	
	Aquæ menthæ	℥ij.	M. ft.

Haustus bis terve in die sumendus.

Broussais strongly recommends the introduction of diuretic medicines, as the tinct. lyttæ, and tinct. scillæ, by means of friction on the skin, aided by gentle laxatives internally. It is needless to observe, that the most perfect quietude is necessary in this complaint; perhaps, however, a sea voyage, from its known effects on the absorbent system, and a change to a warm climate, might be useful here. Anodynes must be exhibited; but they should be such as produce the least constipation, as hyoscyamus, conium, &c. If opium be used, it must be combined with laxatives. Without asserting that the disease under consideration is *identical* with what Dr. Baron has described, under the term "tuberculated accretions of the serous membranes," in his valuable work on that subject, we may at least be permitted to consider the two affections as very *analogous*; and under this idea, the plan of exciting to absorption by nauseating medicines, as recommended by the illustrious Dr. Jenner, in the work alluded to,* is highly deserving of a trial, in so intractable a disease. There can be little doubt, indeed, that the absorbents might be made to act upon many extraneous and morbid growths in the human body, by *rigid abstinence* alone, if patients had fortitude to persevere in the measure. For our own parts, we should place more confidence in this than in any other remedy; and practitioners should at all times bear in mind, that without strict abstemiousness, there is little hope of a cure in chronic peritonitis.

We shall now introduce a few exampless of the acute and chronic forms of the disease under review, from M. Broussais, which will afford ample food for reflection to our readers, and give us an opportunity of making some incidental remarks of our own.

Case. Acute Peritonitis simulating low Fever.

"A man, 26 years of age, large stature and robust, entered the hospital of Medenblick on the 4th fructidor, with an air of great suffering, livor of countenance, sharpness of the features, parched tongue, delirium, constant jactitation. He complained of nothing; but the abdomen was tender on pressure, pulse quick, depressed, and feeble. These being the features of low (ataxique) fever in the last degree, *I could only prescribe tonics and antispasmodics* for the night.

"Next day, (10th of the disease) about one o'clock, the abdomen became intolerably painful, and the patient could not bear the slightest pressure without making great complaint. *A lavement, emollient fomentations.* No relief. The patient got into a convulsive agitation, uttering piercing cries. The warm bath for three quarters of an hour, in which time several spoonfuls of an antispasmodic potion with laudanum and ether. After coming out of the bath he was easy and tranquil, the pulse fuller, and the skin soft. He could now give some account of his complaint. In the vessel on which he embarked at the Texel, he became affected with some gastric symptoms, followed by nausea, cold chills, and malaise. A vomit was given him, during the operation of which, he first felt the pain in the abdomen, which had never since ceased. I now perceived that the disease was peritonitis, and prescribed *leechès*,* *fomentations* and *diluents*. The evening was calm, and only a little sensibility on pressure of the abdomen remained.

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* See also our *Quarterly Series*, No. 6, for October 1819

"Next day, (11th of the disease) the abdominal pains renewed, with restlessness. *Fomentations*. The warm bath was attempted, but the pain was so great that he could not be put into it. Constant tossing about during the remainder of the evening, with exquisite tenderness of the abdomen. I was deterred from leeching the abdomen, by the sinking of the countenance, and weakness of the pulse: indeed, I judged that the process of disorganization had commenced. *Anodynes* were prescribed with the view of alleviating his sufferings, but he could swallow nothing. The blisters which were applied to his thighs produced no effect.

"The day following all was calm, and he said he was 'very well:' but he died in the evening.

"*Dissection.* Corpse extremely muscular. Vessels of the head a little injected, with some serous effusion. Peritoneum red, covered with sanguiferous vessels, and thickened to a line or a line and a half, particularly over the intestinum ileum, where there were several black spots. The peritoneal covering of the mesentery, omentum, and ileum, was coated with a solid exudation of a whitish yellow colour, strongly adherent. The muscular and mucous coats of the intestines sound."

M. Broussais observes, that at the period when this patient arrived under his care, no measures would probably have saved him. We do not agree with him. We are sure that the *symptoms* authorized *general* blood-letting as well as local; together with intestinal evacuations; and we are disposed to think, that under the energetic treatment of this country, the patient might have been saved. At all events, the methodus medendi was here as bad as it possibly could be, and dissection evinced the inefficacy of nature, or the "medicine expectante," in counteracting peritoneal inflammation.

We agree with M. Broussais, indeed, that in the above case, the emetic was injudicious, nay injurious; and well may our author exclaim, "Si les nausées qui décidèrent l'emploi du vomitif dépendaient d'un principe de péritonite, combien le malade est à plaindre qu'on n'ait pas su les interpreter!" *Vol. II. p.* 408.

The following case is well worthy of every practitioner's attention.

Case. Acute Peritonitis simulating Spasmodic Colic.

"Bongeot, ætat. 39, robust and athletic, entered the hospital of Udina, the 7th of August 1807, for the treatment of violent colic, with which he had been tormented during nine preceding days. He had a dull but constant pain in the abdomen, exasperated every night, and for which he had taken, without relief, spices, wine, lavements, and various stimulants. He was affected frequently, during the above period, with vomiting, and the constipation was invincible.

"He had now a countenance indicative of suffering, a flush on the face, contracted pulse, no way frequent, and rather feeble than strong, with little heat of skin, no abdominal distention, and but little tenderness on pressure. I prescribed 'la solution Gommeuse acidulée et des juleps anodyns,' with some amelioration of the symptoms.

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* It is *bleeding* (*la saignée*,) in the original Am. Ed.

8th. This day passed with some little malaise, a sense of painful fulness in the belly, and no appetite. Same treatment.

9th. The obstinacy of the constipation appeared to demand some evacuants. Tamarind decoction. Great increase of pain, and restlessness, but no fever. *No medecine, but mucilaginous drink.*

The complaint went on gradually increasing for some days, with a developement of fever, and at length M. Broussais opened his eyes, and saw that he had peritonitis to deal with! *Fomentations, six leeches to the margin of the anus.* Great reduction of the symptoms, and tranquil night. But the next morning brought a renewal of all the symptoms, with fixed and constant pain in the abdomen, which was increased every night to horrible tortures. Emollients; repetition of the leeches to the anus and lower part of the belly. In short, he dragged out a wretched existence till the 19th of August, without the least *active* measure being taken by M. Broussais, the most *active* and energetic physician in all France!

" *Dissection.* The corpse very fleshy and muscular; all the muscles in a state of rigid contraction. Chest sound, *peritoneum* red, and thickened throughout its whole extent, and covered, in some places, with a whitish exudation. There was a small quantity of serous effusion in the abdomen. The mucous membrane of the *stomach* appeared red; but that of the intestines was perfectly healthy." 412.

It is really too bad to hear M. Broussais throw the blame here upon the *tamarind decoction!* "on la voit, d'abord obscure s'accroître prodigieusement *par l'effet d'un purgative.*" (*!*) M. Broussais even outsrips Dr. Abercrombie in his condemnation of purgatives in peritoneal inflammation. "Les purgatifs seraient presque aussi pernicieux que les vomitifs, dans cette maladie." But we beg Dr. Broussais' pardon when we say, (and indeed without taking much credit to ourselves) that we would have saved Bongeot's life, by bleeding and *purging.* These cases, however, are invaluable to the profession. They teach us what may be *done*, by exhibiting what has been left *undone.*

The above case is valuable in another point of view. It proves to us that acute inflammation of the peritoneum may exist in a very high degree, and accompanied by great pain, without any febrile movement in the general vascular system.

M. Broussais here relates an interesting case of what he denominates "accute hæmorrhagic peritonitis." A soldier 28 years of age, athletic, and a great eater, had, for some time, been subject to attacks of pulmonic inflammation, with slight hæmoptyses. About the middle of September, 1800, he became affected with some general febrile symptoms, for which the surgeon of the place prescribed an emetic, as he considered it "la fièvre du pays." During the operation of the medicine, the patient experienced a very violent and deep-seated pain in the left hypochondre, after which the fever became strongly developed.—On the 17th he took a purgative, and on the 18th was calm, and sent to the hospital of Udina; where, being seen in the evening by a physician, he appeared in such a state of debility and exhaustion, that antispasmodics and light nourishment were ordered.—19th. A deceitful calm; weakness; cold chills.—20th. Calm in the forenoon; but towards evening, violent fever, great anxiety, severe pain in the side, spreading all over the abdomen, respiration laborious, cold sweats. Death in the night.

"*Dissection.* Nothing remarkable in the head or thorax. The cavity of the peritoneum filled with clots of blood, which were spread in sheets over the principal viscera. Spleen vastly distended with blood. On a more accurate investigation, the cellular tissues beneath the peritoneum, and between its duplicatures, were black, and injected with blood."

Case of Chronic Peritonitis.

"A young soldier entered the hospital at Nimeguen for an affection of the testicle. Some time after his arrival he experienced a gastric affection, which induced the surgeon to order him an emetic; during the operation of which he felt pains in the abdomen, that continued in spite of various sedatives. To these were added, vomiting, dysury, and fever; on which account he was turned over to the physician's wards, where M. Broussais found him, two months after the commencement of the complaint.

"He was now wasted, pale, and affected with cough, unaccompanied by expectoration. The abdomen was distended, and painful to the touch; the patient also experienced constant cutting pains in the belly. Vomiting of every thing taken, and aggravation of all the symptoms after eating any thing of an irritating nature; difficulty of making water; pulse frequent, hard, and contracted; exacerbation of heat, fever, and pains in the evening. M. Broussais pronounced the disease to be incurable, and merely prescribed diluent and anodyne drinks. He died about three week afterwards, in an advanced stage of marasmus.

"*Dissection.* Some adhesions in the chest; but the substance of the lungs sound. The abdomen contained a considerable quantity of milky serum. The peritoneum was red, granulated, and, in many places, four lines in thickness. Over its surface were scattered small fragments of a whitish exudation, unorganized, and, in a great measure, dissolved in the abdominal effusion. The liver was enlarged, and resembled granite when cut into, interspersed with tubercles. The mucous membrane of the intestinal canal and stomach perfectly sound." *Vol. ii. p.* 435.

The following case will shew us, that chronic peritonitis may be going on for some time without much derangement of function in the digestive organs.

"*Case.* Nomin, a soldier, 27 years of age, formerly stout and muscular, entered the hospital of Udina, on the 23d of January, 1807, in a state of advanced marasmus, with pain and tumefaction of the abdomen; which, together with the whole surface of the chest, was morbidly sensible to the touch. Face expressive of great sufferings; constant cough, with expectoration; pulse frequent, sharp, and not strong. He stated, that four months previously, he had been attacked by a quotidian ague, during the first eight days of which he became much swelled about the body, which he attributed to the quantity of water he had drunk in the hot fits. He was treated at the hospital of Treviso by a continued exhibition of bitter wine; and at the expiration of two months and three days, he was discharged, apparently cured. But a fortnight after he left the hospital, he became affected with a pain in the side, about the region of the spleen, accompanied by a diarrhœa. This diarrhœa continued obstinate, with fever, emaciation, and cough; and in about a fortnight from this relapse he died.

"*Dissection.* The pleura pulmonalis and p. cost. slightly adherent by means of a whitish unorganized exudation, and about a pint of serous effusion in the left cavity of the chest. Parenchymatous structure of the lungs sound. The peritoneum a little thickened, and lined throughout with the gelatino-albuminous exudation above-described in the thorax. The whole of the abdominal viscera, without exception, were covered with this production, which served to glue them slightly together. No serous effusion. The mucous membrane of the stomach was a little red, and some reddish patches were observable on the mucous surface of the small intestines, and also of the colon, but without any ulceration." 437.

In the following case, we imagine, Dr. Baron will recognize an instance of the disease on which he has lately written. It presents also a complication of peritoneal inflammation, with phlogosis of the mucous membrane of the intestines.

"Pierrott, 22 years of age, perceived, about the middle of July 1806, a swelling of the abdomen, succeeded by much flatulence, and by diarrhœa, together with pain. These continued a month, when he was obliged to quit duty and enter the hospital of Udina, where he had twenty or thirty stools per diem. The diarrhœa was mitigated for a short time by ipecacuan; but it returned again, and now the patient came under the care of M. Broussais. The patient, at this time, had frequency of pulse, heat, diarrhœa with tenesmus, obscure but permanent pains in the abdomen, with flatulent distension, tenderness on pressure, in the line of the ascending colon. Rice water, demulcents, &c. with anodynes, and rigidly low diet. By these means the diarrhœa was checked, and the febrile heat reduced in a month; but whenever the nourishment was increased, or tonics given to recruit the strength, then the fever, bowel complaint, and pains of the abdomen returned. The low regimen was therefore again persisted in for six weeks longer; but in spite of all this, there continued a dull pain in the abdomen, especially when *lateral* pressure was applied; and the abdomen was evidently more protuberant than it ought to be. Tired of the hospital, he was sent to his corps (exempted from duty) from the 15th of November till the 5th of January, when he returned to M. Broussais in a state of advanced emaciation—the skin of an earthy colour, the belly somewhat prominent and hard, the pulse very frequent, but not much febrile heat. He said he felt painful twistings in the abdomen, with a sensation as though some globular body was ascending to his throat. He was still affected with diarrhœa. Death put an end to his sufferings on the 12th of January.

"*Dissection.* Excepting some old adhesions and a few incipient tubercles, there was nothing particular in the lungs. *Abdomen.* All the viscera bound together by the disease of the peritoneum, which membrane was thickened, discoloured, and formed, with the diseased epiploon, a dense covering, through which were scattered a multitude of tubercles, filled with whitish matter. On the intestinal peritoneum these granulations resembled variolous pustules. The mesentery was morbidly thickened, and its glands tuberculous.

"The mucous membrane of the stomach was a little red, but only in detached patches; the internal surface of the small intestines little affected; that of the colon was generally red, with ulcerations of greater or less extent. The liver sound, the spleen somewhat tuberculated. On the surface of the diaphragm several tubercular productions as large as a pullet's egg." 450.

We suspect that many cases of what is called *common ascites* would, upon minute investigation, present phenomena analogous to the following.

Case. Chronic Peritonitis, with Dropsical Effusion.

"Boulard, a fusileer in the 35th Regt. a man about 30 years of age, stout and muscular, having got cold, by exposure to rain at the siege of Ulm, became suddenly leucophlegmatic. The dropsical effusions, however, gave him so little uneasiness, that he kept at his duty during the winter campaign in the mountains of Styria and Carinthia. In March, 1806, four months after the exposure above mentioned, and the commencement of his complaint, the dropsy forced him to enter the hospital of Udina.

"He had now general anasarca; complained of no particular pain; had only a little malaise and dyspnœa, with some cough at night. Pressure on the abdomen caused no pain, unless it was very strongly made and then it was so obscure and confused, that no indication could be drawn from it, since strong pressure on the abdominal viscera gives uneasiness at all times, even in health. The patient had no fever, an excellent appetite, the complexion unaffected, and, in short, there was reason to hope that the disease might be idiopathic dropsy. By a proper employment of aperient and diuretic medicine, the dropsical effusions were almost completely evacuated in three weeks; but the medicines gradually lost their effects, the dropsy returned, and the patient finally sunk on the 6th of April, 1806, about five months from the origin of his ailments.

"*Dissection.* The lungs much pressed upon by the protuberant diaphragm, and somewhat engorged; but no disorganization of structure. *Abdomen* filled with a whitish serum; the peritoneum thickened, non-transparent, and almost every where lined with a white, pulpy, and easily separable exudation. The mucous membrane of the intestinal canal sound throughout."

The above state of the peritoneum is doubtless the cause, in numerous instances, of those obstinate relapses which occur, from time to time, in cases of ascites. But dissection is too little attended to in death from dropsy. An important practical indication, however, may be deduced from these researches; namely, that where no abdominal viscus appears obstructed in ascites, we should examine minutely into the state of the peritoneum, and *generally* suspect some inflammatory action in that extensive membrane. Much might probably be done by leeching the abdomen, and blistering, while evacuating the collected effusions by diuretics and aperients.*

We shall extract but one more case of this disease, and may it prove a useful beacon against the dangerous doctrines of *debility*, on which even a Broussais has too often been wrecked!

" *Case.* Pagnet, 22 years of age, a fusileer, in the 84th Regt. received a wound in the foot; for the cure of which he entered the hospital of Udina, and remained there three months, with the following symptoms. From the time of his entrance he complained of pain in the belly, which was very tense, while the aspect of his countenance evinced that he had been unwell for some time. The wound of his foot would not heal, but remained stationary in spite of every thing they could do. He had evening fever. Tonics and stimulants always made him worse, and frequently nauseated his stomach. About the middle of May, fifteen days before his death, Pagnet complained that the pains in the abdomen, which had hitherto been of a dull obtuse kind, were now become acute; and, in a short time, they became so aggravated that the weight of the clothes was insupportable. Fever was now strongly developed, with burning heat, and much fœtor of all the excretions. The stomach would not retain any thing, and he was harrassed to the moment of his dissolution, with the most excruciating sufferings and ardent fever. '*Il souffrait continuellement des douleurs horribles, et était dévoré par une fièvre ardente qui, par sa violence, paraissait fort au dessus des ses forces*'."

It does not appear that any depletory measures were put in force, at any period of this wretched man's complaint! The following ravages of inflammation are coolly detailed, without M. Broussais' appearing to even dream that there was the least mismanagement of the case!

" *Dissection.* Evidence of universal peritonitis, with a concrete exudation, while a black, purulent sanies, of stercoraceous fœtor, filled all the intervals which the adhesions had left. The intestines were sphacelated in numerous points, and perforated like a sieve in many places. Through these perforations, fæcal matter and intestinal gases had passed into the cavity of the abdomen. The mucous membrane of the bowels was sound throughout, excepting at the places where the perforations were situated." 482.

It is totally inexplicable how our continental brethren can see these things, and accurately describe them, without, in the smallest degree, profiting by the results of their pathological labours!†

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* See our Review of Dr. Crampton's excellent paper on dropsy, in No. 5, Quarterly Series.

† These observations are not candid; Pagnet never was under the care of M. Broussais, and his case is brought forward for the avowed

If they *will* continue blind to the light of truth, let us profit by their oversights. These pathological specimens could not occur in Great Britain; but they are most invaluable, as establishing the solid basis on which the energetic practice of this country, in acute diseases, rests.

It is now time for us to close this article. We have endeavoured to form a focus, whereby the rays of light, from various quarters, might be made to converge on a single point, and illuminate an important subject. Should our labours meet the approbation of the profession, we shall continue them, while health and life are spared, until this Journal shall become a depositary of medical illustrations that may render it a useful and authentic source of reference, on all the leading points of pathology and practice. If TIME should confirm these (we trust) laudable anticipations, it will hereafter cheer the gloom of ebbing life, to reflect that we have not lived in vain, nor suffered the vigour of manhood to pass without contributing our quota to the mighty impulse which guides the march of human knowledge at the beginning of the nineteenth century.

INSANITY.

1. *Sound Mind; or, Contributions to the Natural History and Physiology of the Human Intellect.* By JOHN HASLAM, M. D. Octavo, pp. 192. London, 1819.

2. *An Inquiry into certain Errors relative to Insanity, and their Consequences; Physical, Moral, and Civil.* By GEORGE MAN BURROWS, M. D. F. L. S. &c. &c. &c. Octavo, pp. 320. London, 1820.

3. *On Mental Derangements.* By M. ESQUIROL, M. D. Physician to the Salpêtrière, &c. &c.
[Art. FOLIE, Dict. des Sciences Méd.]

> "Huic ego vulgum
> Errori similem cunctum insanire docebo." HOR.

The union of mind and matter is a mystery that will never be solved by man; and consequently, the disquisitions on it will be interminable. The intimate connexion or absolute dependance

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purpose of illustrating the effects of the disease, when left to nature or improperly treated.—*Am. Ed.*

of mind on matter, will for ever furnish the materialist with inexhaustible arguments for their identity; while the wide range of phenomena exhibited by the operations of mind, and which are totally inexplicable by the known laws of matter, will furnish abundant arguments for the Platonic Philosopher to vindicate the existence of that—

——————— Divinity that stirs within us,
And points out an eternity to Man!

We will not, therefore, involve ourselves in metaphysical speculations; but keep to the usual line of our policy, practical pathology and therapeutics.

Of the three works which lie before us, the two first afford us comparatively few materials for the construction of this article; Dr. Haslam's Essay being almost entirely composed of elementary and physiological facts and deductions, well known to every physiologist and philosopher; while the work of Dr. Burrows, though exceedingly important in its way, turns chiefly on the correction of certain moral, civil, and popular errors attending insanity, the Insane, and Lunatic Asylums.

A perusal of Dr. Haslam's Essay will convince any man that the author's *mind is sound*, his judgment correct, his perceptions clear, and his deductions legitimate. The style of his work too is of a very superior kind, and might be taken as a model for philosophical and medical disquisitions.

From Dr. Haslam's concluding chapter we shall condense some reflections, and exhibit some specimens that *may* prove interesting to the reader, and *must* prove honourable to the writer.

Dr. H. well observes, that a contemplation of every gradation of mental energy, from man to the maggot, impresses us with the evidence of appropriate contrivance and wisdom. The mental endowments, however, which animals possess, keep them stationary. They cannot comprehend; and if they did, they want the means to communicate, consequently every attainment perishes with the individual.

> "As they have not been endowed with the capacity to numerate, they can experience no solicitude for the past, nor apprehensions for the future. In the Grammar of Animals, the present is the only tense;* and to punish them for the faults they had formerly committed, would be equally absurd and tyrannical. They are not the creatures of compact, and being unable to comprehend the nature of institutions, and obligation of laws, they cannot be responsible agents." 187.

The above truths only go to prove that animals are not amenable to human laws; and the conclusion is, that a future state of existence for them is highly improbable—for *there* too, they could not be justly punished or rewarded.

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* This is going rather too far. The bee in constructing his cell, and the beaver his house, certainly appear to know something of the *future* tense, as well as the present. *Rev.*

The features of the human mind are very differently shaped, "and strongly indicate an ulterior destination." Man is rapidly progressive, his mind becoming opulent from the intellectual treasures of his ancestors, which he bequeaths, in turn, to his posterity.

> "Had he, like animals, been gifted with intuitive wisdom, the donation would have been so perfect, as to render instruction superfluous; and such endowments would have diminished the measure of his responsibility, The freedom of his will, by which is to be understood the impulse of reason, not the blind dictates of appetite, nor the sallies of tumultuous passions, renders him amenable. 190.

Man alone can repent; retracing the acts of former commission, and resolving on amelioration for the future.

> "In proportion to our love and estimation of justice, we must be satisfied that, under the present forms of government, it is but imperfectly administered; the rewards and punishments in this life will ever be blended with the hopes and fears, the interests and passions of our species; and there is much of evil, which human sagacity cannot detect. When we consider the attributes of Deity and the nature of Man, we can never be induced to conclude that the tribunals of this world are the courts of final retribution. Man bears in his intellectual construction the badge of moral responsibility; and consequently, the germ of future existence: and the only incentive that can urge him to the advancement of science, and the practice of virtue, is the reward that Revelation has unfolded." P. 192.

From these sublime and momentous reflections, we must descend to the concerns of our frail and perishable existence, in this sublunary scene. We come therefore to the work of Dr. Burrows.

Our author justly conceives, that the scholastic dogma of insanity being a disease of the *mind*, as an immaterial essence, has been very prejudicial, by directing the practitioner's attention entirely to moral remedies, where the predicate, he thinks, may be safely hazarded, "that he who relies, singly, on moral means, will be as surely disappointed, as he who resorts to the art of medicine only, for the cure of insanity." 7.

Dr. Burrows seems to have good reason for believing, that the curability of insanity is considerably under-rated by the world at large. In short, the *cures* of insanity are as carefully concealed in families, as the disease itself. No eclat attends them.

> "The physician by whose skill they are accomplished is never mentioned. There is only the darker side of the picture presented to the public view; and consequently a reproach, severer than deserved, attaches to the healing art." 10.

Among the prevailing errors regarding insanity, our intelligent author ranks, 1st. its difficulty of cure; 2d. that insanity is an increasing malady; 3d. that insanity is an exceedingly prevalent malady. This leads him to open the body of the work with a discussion on the above topics.

1. *Is Insanity curable; and in what proportion?*

Although the records of Lunatic Asylums are very defective, yet, from numerous returns which our author has collected, with great industry and expense, from several private, and all the public establishments for the insane in England and Scotland, Dr. Burrows concludes, that not only is insanity a curable disease, but "that a very large proportion of lunatics, under a proper system of management, actually recover." 36.

The second question is, whether Insanity be as susceptible of cure as other maladies?

Without discussing the question whether insanity, like most other diseases, has its access, crisis, and decline, this much is certain, that "the difficulty of cure is more or less, according to the time which has elapsed since the incipient attack, or the complication of mental with bodily complaints." We apprehend that Dr. Burrows would have been more correct to have said "*moral with physical*," than "mental with corporeal;" since all acknowledge now, that insanity is a *corporeal* disease, either of function or structure. But this is of no consequence.

Now it unfortunately happens, as Dr. Burrows well observes, that the approach of insanity, though generally perceptible especially to strangers, is rarely remarked by relations; but is construed into nervous irritability, or eccentricity, or any thing rather than the right. The complaint is suffered to proceed till some terrible exacerbation of delirious fury or despondency ensues, and the malady is thus confirmed in one whose intellects, very probably, might have been preserved, had timely aid been administered. Thus, "did mental derangement experience the same prompt attention as most other complaints, it is impossible to judge how much more favourable the results might prove." But, as Dr. Burrows justly observes, the reverse almost always obtains; and consequently, insanity more frequently degenerates into a chronic or continued type than any other disease, and has not the same advantage from the means of cure.

In addition to the above obstacles, there is too often opposed to the exertions of the physician, the influence of pride, suspicion, deception, and alas! the avarice, or other interested motive of friends, who very often object openly to the prescription of remedies. Yet, under all these disadvantages, we have incontrovertible evidence how great a proportion of lunatics recover, as the records of public and private Asylums testify. In 1798, Dr. Willis stated, in the House of Commons, that nine cases out of ten of insanity recovered, if placed under his care *within three months of the attack.* Doubts of his veracity were then and afterwards entertained; but few men ever possessed the essential auxiliaries to success which Dr. Willis did.

> "We now see that, in situations, perhaps less promising, eight in ten, and even six in seven *recent* cases are reported, and believed to have actually recovered." 44.

In La Salpétrière, at Paris, the proportion of cures of recent cases, was, 1806-7, according to Dr. Carter, almost as high as that of Dr. Willis; and, according to Dr. Veitch's official statement to Parliament, nearly two in three of the recent cases were discharged cured, while only five out of one hundred and fifty-two old cases recovered. In Dr. Burrows' own practice, of about three hundred cases, the proportion of cures exceeds any which is here stated; being ninety-one per cent. in recent, and thirty-five per cent. in chronic. Upon the whole, our author thinks he is justified in concluding, that insanity is fully as curable as the general run of other diseases.

The next question is—"*Is Insanity an increasing malady?*"

Mental derangement has been truly designated the "vice of civilization;" for the more polished and artificial the people are, the more prone are they to insanity. In Spain, where the inhabitants are more characterized by primitive manners, especially temperance, mania is said to be comparatively rare; while the unsophisticated Aborigines of North and South America, are reported by Rush and Humboldt to be wholly exempt from this irritation.

All the physical causes of insanity Dr. Burrows considers to be *extraneous* or artificial, except one; to wit, hereditary predisposition, or that peculiarity of organization transmitted from parent to progeny, and "which alone can be rationally supposed to have a progressive operation in augmenting the number of the insane." To this we cannot entirely subscribe, Dr. Burrows, in the preceding page, acknowledges that the more polished and artificial the people, the more prone are they to insanity. It follows, surely, from this, that the progress of civilization augments the *causes* of insanity, and consequently the number of the insane. That civilization, refinement, luxury, and effeminacy, are, at this moment, on the increase, we believe few will be inclined to deny. We conceive too, that the more *thinking* a nation becomes, the more prone will it be to mental derangement. Learning is every hour increasing throughout the lower orders of society, and we all know—

> "That shallow draughts *intoxicate the brain*;"

nor is it likely the aforesaid classes shall drink so deeply at the fountain of knowledge as that it shall "sober them again." When we come to Dr. Esquirol's work, it will be seen how powerfully scepticism and materialism have tended to destroy the happiness of the French people, and conduced to insanity and suicide. It is a melancholy truth, that irreligion and scepticism are making rapid strides in this country, and the consequences will be doubtless the same as in France. It is from a general view of these circumstances, rather than from the numerical returns of Lunatic Asylums, that we would be led to the conclusion, that insanity has increased and is increasing.

The following extract from a private letter of Dr Halloran to a physician of the metropolis, shews that in Ireland, at least insanity is on the increase.

> "With us it is but too obvious that this malady is still greatly on the increase; and the misfortune is, that we have not even yet seen the worst of it. The desperate break-up of property here, amongst the speculative farmers and *middle men*, as they are called, who, for a series of years, were in the enjoyment of affluence, is beyond all belief. To these in particular, now reduced to actual poverty, in numerous instances may be ascribed the extraordinary run of maniacal cases which, in fact, are daily offering; and who, on feeling their individual share of the general crash, are unable to bear the reverse of circumstances to which they are exposed. In order to drown care, therefore, they become an easy prey to the effects of drunkenness, want, and disappointment combined."

To such an extent has the misfortune arisen, that the public Asylum at Cork is now overloaded with fifty cases more than it is calculated to hold, and the Grand Jurors have voted a sum of 4400*l.* to be laid out, under Dr. Halloran's superintendance, in the construction of increased accommodation for the insane.

This, by the bye, is a tolerable proof of the respect in which the professional and private character of Dr. Halloran is held by his fellow citizens, though one of our London hyper-critics accuses him of ignorance and materialism!

Dr. Burrows enters into a long and critical examination of the registers above mentioned, the aggregate of which exhibit an evident increment of the disease. But we cannot follow our able author in this scrutiny. He has plainly proved that these returns are fraught with error, and exceedingly liable to be influenced by various circumstances that render them weak authority. Still, as we said before, we look to the etiology of insanity, rather than numerical tables, for evidence of its progressive increase.

In the question of the *comparative* prevalence of insanity in this, and other countries, Dr. Burrows has brought forward many important documents, and made some excellent observations. He has clearly proved, that *suicide* is infinitely more prevalent in Paris, Berlin, Copenhagen, and probably many other capitals, than in London; and thus rescued his country from a common, though unjust, accusation. This section is concluded in the following words.

> "But enough, surely, is advanced, to refute the general conclusion, that insanity is extraordinarily prevalent, and that it exceeds in England." 105.

In the next section, indeed, our author attempts to prove, from certain official returns, that insanity has actually decreased within the last few years, which he attributes not to any abatement of the *causes* of the disease, but to a more successful *practice* pursued. That the treatment of insanity, both moral and physical, is improved of late, we are ready to grant; but we are somewhat sceptical, as to the inference which our author has drawn on this point. We must pass over some sections on the state of Lunatic Asylums, and on the condition of the epileptic, fatuous, and idiotic, as not coming within the objects of our Review, though highly creditable to the author and interesting to the public.

The 9th section embraces the question—"*Is Religion a cause or an effect of Insanity?*"

Dr. Burrows quotes the opinion of the Chancellor de l'Hopital, "that religion has more influence on mankind than all their other passions combined." Of this truth, he thinks the whole world is an illustration.

> "And as there is no single passion that may not be excited to an excess inducive of mental derangement; so we may readily believe that religion, which influences the internal man more than the passions collectively, may be a cause of insanity. On the other hand, there is no doubt that a lunatic may imbibe a religious, as well as any other hallucination; and yet be insane from a cause very contrary to religious. In the one case, however, it is a cause; in the other, an effect. Now, a great source of error seems to arise from the confounding of this necessary distinction." 173.

We believe that it would be more correct to call it fanatacism than religion, when it produces insanity. The following sentiments, from such a man as Dr. Burrows, will be read with interest in the present times of scepticism and irreligion.

> "Religion, it must be acknowledged, is the very essence of humanity. Without it, man has no guide but his passions—no law but his will. Even savages have some notion of a DEITY, or a future state:

> and although it be not always a God of Mercies they adore, yet, divest them of the sense of a superior and presiding Power, and the character of the people would sustain a material change; and, perhaps, for the worse. What follows, then, when scepticism and infidelity reign, where Christianity once shed its pure and benign influence? The human mind having lost that prop which was its stay in the hour of need, chaos ensues; despair succeeds to hope; and reason, which establishes man's supremacy on earth, is overthrown. Here insanity supervenes on the defect of religion. As a cone inverted; so, we may be assured, is the state of morals where religion has been extinguished: it is a fabric without a foundation; and there insanity will emanate and most exceed." P. 178.

Dr. Burrows thinks that, were the remote cause of insanity, when marked by religious exaltation or despondency, to be traced, the lunatic would be found a convert from his original to some new faith—"and that the aberration was usually developed during the transition."

Our author illustrates the above position by five or six very apposite examples, which came within his own cognizance. Indeed, the whole of this section is executed in Dr. Burrows' best style of strong and forcible reasoning. At page 218, there is a passage which we deem worthy of extracting, for the benefit of our readers.

> "Were I to allege one cause, which I thought was operating with more force than another, to increase the victims of insanity, I should pronounce, that it was the overweening zeal with which it is attempted to impress on adolescence, the subtle distinctions of theology, and an unrelenting devotion to a dubious doctrine. I have seen so many melancholy cases of young and excellently disposed persons, of respectable families, deranged from either ill-suited or ill-timed religious communication, that I cannot avoid impugning such conduct as an infatuation, which, as long as persevered in, will be a fruitful source of moral evil. The old Romans knew human nature better: they had a law which forbad any person entering upon the sacerdotal office before the age of fifty. This was to prevent theological discussions before an age was attained when a bad effect was not to be apprehended." 218, 219.

Dr. Burrows objects to the commonly received opinion, that "religious insanity," as it is called, is incurable, or at least, extremely difficult of cure. Whenever he has been left to follow his own judgment, however deeply the mind was imbued with religious delusions, he has never, in recent cases, found particular difficulty in curing the patient.

The subject of the 10th section naturally arises out of the preceding:—"the efficacy of religious instruction of lunatics." We entirely agree with Dr. Burrows, that before religious instruction, in any form, be attempted, an intimate knowledge of every patient's state of mind, and of his former and present opinions, should be acquired; consequently, that no minister can assume this office of instruction, unless he have constant intercourse with the patients, and be well acquainted with each. No man, except a zealot or fanatic, will question the truth of the following passage.

> "Suppose a certain number of lunatics were selected, whose cure, it may be thought, religious instruction will facilitate. Is it not clear, that the spiritual admonitions which may be adapted to one, may be a source of irritation to another? For where men who are called sane, are so exceedingly tenacious about the mere forms and ceremonies of worship, and are thence impelled to acts little short of madness; how can we imagine, that, among a number, some insane, some weak of intellect, and some not confirmed yet in judgment, offence should not be taken, if the doctrine or rites most consonant with each patient's notions, be not preferred? Without, therefore, the utmost precaution, it is not difficult to determine, that the introduction of spiritual subjects must be dangerous and often injurious." 227.

There are doubtless, as Dr. Burrows observes, many lunatics to whom religious instruction would be extremely useful; but it is evident that this must be exhibited *individually*, and adapted to the particular case. It is extremely problematical if any discourse, however carefully composed, would ever suit a lunatic *audience*.

> "It results, that religious instruction must, in the first instance, be tried as an experiment: the only safe way in which it can be essayed, is by a previous personal examination of each patient's state of mind and feelings; and if pronounced in a fit frame, there can be no question, that the inculcating of the simple and benign precepts of Christianity, will not only be found an efficacious auxiliary to the restoration of a sane understanding, but to the subsequent preservation of it. For true religion yields to the afflicted—relief; to the sinner—hope; to the repentant—forgiveness; and to all who possess a sound mind, and believe, is "the source of light and life, and joy and genial warmth, and plastic energy." 232.

The remainder of Dr. Burrows' work is principally taken up with "suggestions respecting legislative regulation of Lunatic Asylums, &c." and tables of official and other reports from various Institutions, public and private, for the reception of insane persons. These we cannot enter upon, in a medical review; but refer to the work itself, which does great credit to Dr. Burrows' industry, zeal, and well-known talents.

From his strictly medical work on Insanity, which he has long promised to the profession, and which he still promises, we anticipated a fund of important and useful observations, an account of which we shall not be slow in communicating to our readers. We may remark, in closing this article, that the author has candidly apprized the public that the work is not to be considered as a contribution to *medical science*, in its strict sense; it is consequently written in a familiar, but certainly a neat, and even in some places an elegant style, perfectly appropriate to the subject of the volume.

And now we must take up Dr Esquirol's Essay on Insanity, which is more adapted to the nature and design of our Review than the two works of our respected countrymen, Drs. Haslam and Burrows.

Among the leading articles in that great national, but unequal work, the DICTIONAIRE DES SCIENCES MEDICALES, Dr. Esquirol's paper on Insanity, holds a distinguished rank, not only on account of the talent, but the extensive experience, and accurate observation of its author. The article occupies eighty pages of the Dictionary, and has cost us considerable labour to translate, analyse, and condense it, within the limits of this Review. We hope, however, that we shall render our professional brethren, in this country, some service, by diffusing among them the observations on insanity of an illustrious foreigner, though at the expence of some midnight vigils on our parts.

§ I. The symptoms of insanity relate to an alteration in the thinking faculty—a subversion of the moral affections—lesions of function in the organic life. The sensations of the insane are perverted, and they appear the sport of erroneous impressions. The sense of *sight* evinces a thousand illusions. The maniac often knows not his friends or relations, frequently mistaking them for strangers or enemies. A great number of insane, imagine they *hear voices*, which speak distinctly to them, and with which they hold conversations. These *voices* pursue them and harass them by day and by night—in public and private—in their walks—in their travels and in their closets. The sense of *smelling* does not escape these perversions.

" *Case in Illustration.* A lady, 27 years of age, in the last stage of phthisis, perceived in her room an odour of charcoal. She immediately conceived that there was a design against her life. She left her lodgings, but the *fumes of charcoal* incessantly pursued her till her death."

It is not uncommon for the *taste* to be perverted at the commencement of insanity, generally from derangement of the stomach, the perversion disappearing with the cause which produced it. How frequently do we see the alienated deceived in respect to the size, the form, and the weight of things around them. The greater number of them become unhandy in all mechanical occupations, music, writing, &c. The *sense of touch* having lost its peculiar power of correcting the errors of the other senses.

These perversions sometimes affect but one sense, often two—

more rarely three—but occasionally all. Errors of hearing and sight, however, are by far the most frequent of the perversions. With these derangements, we also find combined, a *multiplicity* of sensations—a superabundance of ideas, and a versatility of resolutions, produced without order, object, or end. This exuberance of thought permits not the insane to fix his attention long enough on each sensation, and each idea so as to separate the false from the true—consequently, he becomes incapable of comparing and abstracting. The result is, a fleeting delirium, [délire fugace] the object of which is perpetually renewed, in every imaginary form. More generally, however, there is one predominant idea or train of thought, on which the attention is exercised with such intensity, that all others are excluded, or, as it were, swallowed up. This may be termed *Monomania.*

In other cases, the sensations appear to be so weak as to leave little or no impression on the sensorium. The patient remembers only things long past, and no new ideas are formed. Such is idiocy.

In some cases of mental alienation, the person seems beyond the empire of the will, and is no longer master of *his own* determinations. He appears directed by an irresistible impulse, to acts which he himself abhors. One person will feel condemned, as it were, to silence and inaction; another will walk, talk, dance, sing, or write, without the power of stopping. Others again, commit acts of fury, at which they shudder the next moment. All the phenomena of insanity show the vast influence of the *passions* in this affliction. They are always *impetuous*, whether they be of the gay or the sombre cast, in mania, monomania, and melancholia.—In idiocy, they are only such as are founded on the primary wants and impulses of man—as love, anger, jealousy.

In mental derangement, the sense of delicacy is obliterated; and people of the finest previous feelings, will deliver themselves up to the most indecent or culpable actions, without the consciousness of impropriety.

Pusillanimity is a remarkable trait in the character of the insane. They are timid, distrustful—suspicious—never satisfied with their present condition, but always desirous of being where they are not. They have no care for the future—all their anxiety is for the present moment. It is this discontent of mind which detaches them from their parents and friends, and causes them to hate the most, those whom they before most cherished. There are a few exceptions, indeed, where the insane still preserve an inviolate affection for those whom they previously loved or esteemed: but such affection is without confidence in the objects, to whom they will give no ear in respect to precepts or advice. This alienation from friends is one of the most constant and pathognomonic traits of the malady.

The return of the moral and social affections, within just bounds, the desire of seeing their children, parents or friends, and of resuming their wonted habits or employments, afford the best hopes of recovery; and *vice versa.*

§ II. In respect to *physical* phenomena, we see the vital powers of the insane often exalted to a degree that enables the maniac to resist the influence of very powerful external agents. But this exaltation is not so *general* throughout the system as people imagine. If there be greater force or vital power in one class of organs or parts, there will be a deficit in some others.—Among the physical phenomena of insanity, few are more constant or remarkable than want of sleep, and that peculiarly disagreeable odour from the body, as well as the excretions of the patients, which impregnates the clothes and bedding. Some are devoured with a burning internal heat; most have a voracious appetite, and constipation or other irregularity of the bowels. A great proportion are afflicted with *pain* in some organ or part, especially the head, the chest or the abdomen, which the insane generally attribute to the malevolence of their enemies.

From the preceding and many other phenomena, then, mental and corporeal, we may fairly conclude that, in insanity, the vital powers are deranged; the senses impaired; the faculties of perceiving, comparing, and associating the ideas, disturbed; together with more or less lesion of function in the organic life. Such are the *facts*, without any mixture of hypothesis, and without attempt at explanation. Nevertheless, the following hints may be practically useful.

A young man conceived himself at court, and surrounded by courtiers. He prostrated himself at the foot of the supposed sovereign, and became enraged when he saw the servants take liberties with his imaginary king. M. Esquirol caused a bandage to be placed over his eyes for two days, during which the delirium entirely ceased; but on removing the bandage, the hallucination returned. Reill states, that a woman conceived she saw spectres, and fell into a convulsive delirium. Her maid servant placed her hand over her mistress's eyes, when the latter immediately cried out, "I am well," the spectres having disappeared. These hints are worthy of attention, especially in monomania. The insane, on recovering, preserve a distinct recollection of all that past during the hallucination.

§ III. M. Esquirol classes insanity in the following order.

A. Monomania or melancholy; in which the hallucination is confined to a single object, or to a small number of objects.

B. Mania; in which the hallucination extends to all kinds of objects, and is accompanied by some excitement.

C. Dementia; wherein the person is rendered incapable of reasoning, in consequence of functional disorder of the brain, not congenital.

D. Idiotism congenital, from original malformation in the organ of thought.

M. Esquirol then presents four figures drawn from life, illustrating these four classes of insanity, with graphic sketches of the patients.

"The first, or example of melancholia, is a young woman, 23 years of age, who was brought into the Salpétrière in July, 1812, perfectly taciturn, and desirous of being left quietly in her bed. Great difficulty was experienced in persuading her to take food; but the effusion of cold water conquered her resolution. During the four years that this woman has remained in the hospital, she has scarcely uttered a syllable. She must be taken out of bed, and when placed on a seat she remains in the same attitude the whole day afterwards; the head reclining over the left shoulder; the arms crossed; the eyes fixed. The food is put to her mouth, and she eats without changing posture. When placed in bed, she muffles herself up, and remains in the same position the whole night. She is meagre, her skin brown; her hands and feet often of a violet colour; pulse slow and feeble; menses very irregular; constipation obstinate.

"The next plate represents *mania furibunda.* The unfortunate subject of it is a married woman, 55 years of age, who entered the Salpétrière, April 1814, in the state above mentioned. She is of tall stature; hair white and bristled; eyes blue, sparkling; haggard; physiognomy very changeable; skin pale; emaciated.

"It appears that some losses in business, injurious reports, and domestic troubles, gave origin to the complaint. Her hallucination was general; she abused all the world, was excessively violent, and in constant agitation. Warm and cold baths, opiates in large doses, and various other means were tried, in vain. Nothing but the straight waistcoat could secure her. On the 4th of January, 1815, one year after the commencement of the malady, the weather being very cold, she suddenly expired, without any premonitory symptom indicative of such an event. Anatomical investigation could discover no trace of altered structure in any part of the corporeal fabric.

"The third plate presents the profile of a female 70 years of age, who, after having passed several years in a state of mania furibunda, is fallen into that of DEMENTIA or idiotism.

"The hallucination of this patient corresponds with her advanced age, and the long duration of the complaint. She preserves a few ideas, which still savour of pride. She believes herself the daughter of Louis XVI. but otherwise there is no coherence; no memory of recent transactions; no hopes or fears, desires or aversions. She is calm, peaceable; sleeps well; eats without voracity; and appears perfectly happy.

"The fourth plate exhibits the profile of an idiot; a young woman, 21 years of age, who has been in the Salpétrière three years, without any change. Her head is large and irregularly shaped; the forehead high and prominent, so that the facial angle is more than 90°. She eats voraciously, and without discrimination; passes all evacuations involuntarily; menses regular and abundant; walks little; all her movements convulsive: in short, she is a perfectly helpless infant; insensible to every thing around; heat, cold, rain, or even her own internal feelings. She can only utter the words '*papa and mama*,' which she frequently repeats. No history of her complaint could be procured."

Having now sketched an outline of the symptomatology of insanity, we proceed to an interesting division of the subject; its etiology.

§ IV. *Causes of Insanity.* These are very numerous, both moral and physical. Climate, seasons, age, sex, temperament, profession, modes of life, political situation, civilization, public manners—all exercise an influence in the production of this calamity.

Climate. Insanity does not abound in hot climates, but in the temperate; especially those which are subject to great atmospherical vicissitudes. The influence of climate on this disease, however, has been exaggerated. Thus Montesquieu attributed the great number of suicides in England to the foggy state of its atmosphere; but we shall trace the circumstance presently to a more powerful cause.

Insanity is evidently *endemic* in some regions. In marshy countries *idiotism* prevails. *Cretinism* is endemic in the gorges of the Mountains. A member of the Institute informs us that the disease was found only where the soil was *calcareous*.

Season. Extremes of heat and cold, in Europe, conduce to the production of insanity. We see the effects of coups de soleil. The French soldiers, on first going into the hot vallies of Spain, were much affected with insanity; and the same was the case in the disastrous retreat from Russia. Many of the officers and soldiers became insane, the disease being first acute, passing suddenly into the chronic state. In those who died, the dura mater was found very much thickened.

" The insane are greatly disturbed and exasperated by any sudden atmospherical commotion. About the Equinoxes, each Lunatic Asylum presents a scene of louder uproar, and requires stricter discipline, than at other seasons. From tables kept at the Salpêtrière, during the last nine years, it appears that the admissions were most numerous in the months of May, June, July, and August—less so in September, October, November, and December; but least of all, in February and March. The influence of the seasons on the *march* of the disease bears analogy to the above rule."

In respect to *Lunar* influence M. Esquirol cannot confirm the long prevalent opinion. He observes, that the insane are certainly more agitated about Full Moon; but so are they also about day-break, every morning. Hence, he conceives, the *light* to be the cause of the increased excitement at both those periods.—

Light, he asserts, frightens some lunatics, pleases others; but agitates ALL.

Some authors have ascribed an occasional *epidemic* character to insanity; as Stegman and Sydenham. It is certain that, in some years, independently of all moral causes, insanity is more prevalent than in others.

Age. Infancy appears to bid defiance almost to insanity, unless there be some congenital malformation, or idiotism be induced by convulsions or epilepsy. Nevertheless our author, and others have met with cases of mania arising in very young people. It is about the age of puberty, however, that the causes of insanity begin to operate powerfully on youth. The disease, at this epoch, of course, is characterised by rapid march, and height of excitement; in adult age, it is more chronic. In early life, it is more commonly complicated with affections of the abdominal viscera, and is relieved by the development of hæmoorhoids, and by critical discharges from the bowels. At a more advanced age, with paralysis and apoplexy; and is of more difficult cure.

Sex. Upon a comprehensive comparison, it has been found that there is no other disproportion among the insane of both sexes, than among the sane population in general.

Modes of Life. Intense study, especially where the efforts of the mind are directed more exclusively in one channel, predisposes to insanity. But great genius, and well regulated learning, have no tendency of this kind. If a man, however, meditates incessantly on a particular subject, metaphysical or speculative, all his physical and moral faculties are absorbed, as it were, in the pursuit; his health is neglected; the epigastric viscera become deranged, with torpid chylification, the result of bad digestion; the secretions are depraved; the functions of the skin impeded; and hypochondriacism or melancholy steals over the devotee of letters and meditation. If these excessive meditations and studies take the channel of religion or fanaticism, then there is great danger that the seat of reason may sooner or later give way. Various epochs have been remarkable for the prevalence of insanity; as the times of the Crusades: the Calvinistic and Lutheran disputations, revolutions, &c. Liberty and reform gave a strong impulse to insanity in France, "and it is remarkable (says M. Esquirol) that the character of the insanity varied and corresponded with the different storms which burst over our country." "*Il est rémarquable que les folies qui ont éclaté depuis trente ans, ont eu pour caractère celui des differens orâges qui ont troublè nôtre patrie.*"

The progress of civilization, too, by laying us so much at the mercy of the vicissitudes of fortune around us, and thereby rendering us morbidly sensible to every occurrence, predisposes astonishingly to insanity. Hence the sceptre, the court, the palace, the high military command, the exchange, and riches themselves are no protection against this deplorable evil!

Sedentary habits, intoxication, excess in venereal and solitary pleasures, all predispose to, or even excite insanity.

> "La masturbation, ce fléau de l'espèce humaine, est plus souvent qu'on ne pense, cause de folie, surtout chez les riches."

A twentieth part of the insane females admitted into the Salpêtrière are previously prostitutes. The following melancholy picture presents an awful lesson to the world at large!

> "Religion (says our author) no longer obtains, but as a mere ceremony, on certain solemn occasions. She no longer carries consolation or hope to the bosom of the wretched! Religious morality no more serves as a guide for reason, in the rough and intricate path of life.—Cold-blooded selfishness has rooted out every source of feeling; and there is no where to be seen either domestic affection, respect, love, obedience, or reciprocal dependance. Every one lives for himself; and the ties, which used to connect the present with future generations, are dissolved."

> "La religion n'intervient que comme un usage dans les actes les plus solennels de la vie; elle n'apporte plus ses consolations et l'espérance aux malheureux; la morale religieuse ne guide plus la raison dans le sentier étroit et difficile de la vie; le froid égoïsme a desséché toutes les sources du sentiment; il n'y a plus d'affections domestiques, ni de respect, ni d'amour, ni d'autorité, ni de dépendances réciproques; chacun vit pour soi; personne ne forme de ces sages combinaisons, qui liaient à la génération future les générations présentes."

Alas! if these be the fruits of knowledge, it may be well said that "'tis folly to be wise."

Great as the horrors of the revolution were, M. Esquirol considers their influence in producing insanity as nothing, compared with the corruption of morals and manners, public and private, resulting from the doctrines of materialism.

The Passions. The first wants of our nature relate to the preservation of the individual, and the reproduction of the species. They are so strong and universal, that they may be termed instincts rather than passions. These last are the fruits of developed intelligence and advanced civilization. Infancy is free from the passions, and, consequently, from insanity. As puberty and manhood advance, the instincts come forth in all their strength, and afterwards the *factitious passions* take their ascendency; as self interest, ambition, pride, avarice, &c. Now it is, that insanity breaks out, in all its varied forms and characters.

The passions and emotions most productive of this complaint are, love, fear, fright, rage, ambition, reverses of fortune, and greatest of all, *domestic chagrin*, or family dissention, which comprises all the miseries to which poor humanity is liable in this world!

The exhilarating passions or emotions are rarely the cause of insanity. Excessive joy will destroy life, but not reason. Those who become insane, after the sudden acquisition of riches, may attribute the disease to the altered modes of life which result, together with the generation of new passions and desires, rather than to the first emotions of joy on the event.

A signal source of insanity, as M. Pinel observes, is the struggle between the principles of religion, morality, and education, on one side, and the passions on the other. This combat in the breast of man often ends in the loss of reason!

> "Moral frequently combine with physical causes in producing mental derangement, especially in women. A young lady, under the menstrual movement, was frightened by a peal of thunder. The catamenia were suppressed; the head became deranged, and reason did not return till the menses were re-established some months afterwards.—Another young woman had a safe accouchement. On the seventh day she was suddenly and unexpectedly reproached, in severe terms, by her father. The lochia and the mammary secretions were suppressed; mania furibunda followed, and required six months for its cure. This *combination* of moral and physical causes, in fact, is much more commonly the origin of insanity, than either of them singly. But the moral causes predominate far, in number and force, over the physical. It is the latter class, however, that comes more immediately within the province of medicine, and to which we shall now direct our attention."

Hereditary Organization is one of the most common physical causes of insanity, especially among the rich, where it is observable in every *second* case; while among the poor, the proportion is one in six. Children born before the commencement of insanity in the parent, are much less liable to the disease than those who are born afterwards. This unhappy predisposition is painted in the physiognomy, the exterior configuration, the ideas, the passions, and the habits of the offspring; and it is called into action by much slighter causes than would otherwise be necessary, when there is no hereditary taint. In short, it is perfectly analogous to the congenital predisposition to gout, phthisis, and some other hereditary diseases. This should always be borne in mind, in the education of children, whose parents were insane, and who should be placed as far as possible out of the reach of exciting causes of the disease. Hereditary insanity is not incurable on that account, though the cure is more difficult, and relapse more probable than under opposite circumstances.

The primary cause of insanity is often stamped on the tender fabric of the body, in utero, during lactation, or in the first dentition. Numerous were the women who, during the storms of the revolution, brought forth children, in whom the slightest causes produced insanity. Falls, or blows on the head, during infancy, frequently predispose to, or even excite mental derangement at some future period. Interruptions and irregularities of the menses were traced as the causes of insanity, in the proportion of about one in six; and the return of the catameneal period is, at all times, an epoch of irritation, in female insanity. M. Esquirol was led to attribute the origin of the disease, in many instances, to suppression of leucorrhœa in women, and the hæmorrhoidal discharge in men.

Parturition is a frequent cause of mental alienation. Out of six hundred females in the Salpétrière, and M. Esquirol's private asylum, fifty two dated the origin of their complaints at this epoch. Conception and pregnancy too, he believes, are occasionally the cause of this affection. He saw a young female who had a first attack of insanity immediately after marriage, a second attack at the period of conception, and a third attack during the second pregnancy. Each paroxysm lasted about a fortnight. Mental derangement occasionally takes place during lactation, generally with a preceding suppression of the milk.

Sudden suppression of the cutaneous transpiration is no uncommon cause of insanity; and it is in this way that atmospherical vicissitudes conduce to its production. A man was subject to copious sweats about the head. He was advised to wash himself with cold water. The perspiration was suppressed; but insanity became established. A young man waded across a rivulet while freely perspiring. He had a rigor on going to bed, and immediately afterwards turned maniacal.

Fevers not unfrequently leave a predisposition to insanity, which may not be excited into action till some years afterwards, when the fever is forgotten.

The sympathetic irritation of accumulations in the stomach and alimentary canal, has induced this disease, as also worms. A great number of chronic affections, as well by their inconsiderate removal, as by their spontaneous metastasis, have ended in mania. Epilepsy, in particular, is a fruitful source of mental derangement. Of three hundred epileptics in the Salpêtrière, more than half are insane! Hysteria and hypocondriasis too often degenerate into the disease under consideration. The abuse of mercury and opium is occasionally the source of this complaint.

§ V. *Progress of Insanity.* The causes of insanity do not always act *directly* on the brain; more frequently, on the contrary, they are preying on some organ at a distance, the nervous, sanguiferous, or lymphatic systems; the digestive organs, or the organs of generation, being the primary seats of the evil. The *exciting* causes of insanity, moral and physical, sometimes produce the disease *suddenly*, especially in those who are strongly predisposed; but, in by far the greater number of cases, certain functional derangements have been going forward for years before the mental hallucination is developed; such as convulsions, head-aches, spasms, constipation, &c. On the other hand, in the intellectual system, we see ebullitions of the passions, or excentricities of temper, long precursory of the final overthrow of reason.

Insanity is either continued, intermittent, or remittent. The remissions of the disease offer some curious anomalies. A person will pass three months, for instance, in a state of melancholy; the three following months in maniacal excitement; and then three or four months in a state of fatuity; and so, successively, with more or less regularity. There are others who only experience paroxysms of excitement at certain hours of the day, days of the week, or even seasons of the year, the intervals being passed in a calm and quiet hallucination.

Insanity appears sometimes to terminate critically, like a fever. A certain change in the countenance, with sense of general lassitude; sleep; appetite; softness of the skin; freedom of the secretions and excretions; and a return of moral feeling, are indicative of approaching recovery. This will be perfect if, with the return of reason, the patient resumes his usual affections, habits, and general character. But if, on the other hand, the functions of the organic life are re-established—if the sleep, the appetite, the secretions, and the excretions come back to their usual healthy standard, without a corresponding sanity of mind, the disease is likely to pass into a chronic state, or fatuity itself.

§ VI. *Curability of Insanity.* From an accurate survey of the records of Lunatic Asylums, we are authorised in concluding, that cures are effected in about one in three cases of insanity. The probability of cure, in individual cases, depends greatly on the previous duration of the disease. M. Esquirol has constantly observed a marked *remission* in the course of the first month, after which it generally passes into the chronic state. It is in the *first* month, therefore, that we have the greatest probability of success. Physicians are divided in respect to the medium curable period of insanity. Into the Salpétrière, in ten years, [1804 to 13] were received two thousand eight hundred insane; of whom seven hundred and ninety-five were ultimately pronounced incurable, in consequence of age, fatuity, or complicated diseases, as epilepsy, &c. Six hundred and four were cured in the first year; five hundred and two in the second; eighty-six in the third; forty-one in seven succeeding years. From these facts, we may conclude, 1mo. that, in the two first years of insanity, the greatest number of cures are performed; 2do. that the medium curable period is somewhat less than a year; 3tio. that after the third year, there is not above one in thirty cured. It is true there are a few rare instances of restored reason after a period of many years hallucination; but these cases are more calculated to prevent despair than inspire hope. The most favourable epoch of life for the cure of insanity is between the age of 20 and 30. After 50, there is little chance. Mania is more frequently cured than melancholia or monomania. Idiotism and the fatuity of old age are absolutely incurable.

There is a proportion of the insane who can only be restored to a *certain degree* of sanity. These retain a morbid and excessive sensibility to all the causes, moral and physical, which produce the disease. While kept quiet, and unexposed to any source of irritation, with attention to the general health, they enjoy a considerable share of rationality and tranquillity; but they are incapable of again mixing with the world, or fulfilling the functions of any office or employment, without risk of complete relapse. These bear a proportion of about one in twenty of the recoveries.

It is evident, from the preceding remarks, that we are more successful *now* in the cure of insanity than formerly. But, from all quarters, we hear of the frequency of *relapses*. Let it be remembered, however, that people who have suffered an attack of any disease—for instance, pneumonia, hepatitis, apoplexy, &c. are more easily thrown into a similar disease, in future, by the same causes, in consequence of certain organs being left in a weakened state. But we do not call these *relapses:* they are *new* attacks, not sequelæ of the former ones. The same observations apply to insanity, and with increased force, since the range of moral and physical causes to which a recovered maniac is exposed, far exceeds that of any other disease, while the patient is generally much less on his guard against the causes which lead to a repetition of the attack.

§ VII. *Pathology.*

"At this word, our readers may fondly entertain the expectation that we can inform them of the long-sought seat of insanity. But, alas! we are far from being able to satisfy them; for dissection has hitherto proved a steril soil, in this respect! The phenomena observed by Willis, Mangetus, Bonetus, Morgagni, Gunz, Meckel, Greding, Vicq-D'Azyr, Camper, Chaussier, Gall, &c. have led to nothing but negative and contradictory results. In this investigation, it is of the highest importance to distinguish the *effects* of those diseases which occasioned the *death* of the patient, from those which occasioned the *derangement* of the mind. It is by confounding these together, that there has arisen such contrariety of opinion respecting the pathology of insanity. The details of my researches *post mortem*, would be too long for insertion here; and I shall content myself with presenting the result or conclusions drawn from dissection up to the present day. I do not pretend that these corollaries possess a mathematical accuracy; but I am convinced that they will be found, in general, correct.

"1. Vices of conformation, in the *skull*, are peculiar to idiotism, fatuity, and cretinism.

"2. Organic lesions of the *encephalon*, or its envelopes, are only observed in those cases of mental derangement complicated with paralysis, convulsions, epilepsy, or where the patient has sunk under diseases with symptoms analogous to the above.

"3. Those effusions within the cranium, whether sanguineous or serous, which we sometimes observe, are the *effects* of insanity, or rather of those diseases which destroyed the life of the insane.

"4. The changes of structure in the thorax, abdomen, or pelvis, are evidently, in many cases, totally unconnected with the mental derangement. They sometimes indicate the *remote* cause or seat of the malady, but never the *immediate*.

"5. Every kind of organic lesion observed in the bodies of the insane, has been also found in the bodies of those who never evinced a symptom of insanity.

"6. In numerous and accurate dissections of the insane, no alteration whatever from the healthy structure, could be discovered.

"7. Dissection has shown every portion of the encephalon disorganized, suppurated, or otherwise destroyed, without any derangement of the understanding.

"8. From all these premises and facts, we are authorized to infer that, the *brain* being only the *principal* focus of sensibility, there are cases of insanity dependent merely on lesion of its *vital powers:* that there are other cases, where the disease has *not* its seat in the brain, but in various other foci of sensibility, placed in different regions of the body: but, in all cases, that it is a *corporeal* disease, whether the lesion be organic, or only functional."

§ VIII. *Treatment.* There are three general indications to be kept in view, in the treatment of insanity; namely, to remove the physical disorders, check the aberrations of the understanding, and calm the troubled passions.

Among the ancients, helebore was the principal remedy. Accident recommended the shower-bath; and after the circulation of the blood was discovered, venesection was carried to extravagance. In England, the treatment of insanity was long kept a secret; but M. Pinel changed the lot of the insane, broke their chains, and reduced their management to a rational system.—Since that period, confidence has been inspired by increased success.

According as the causes of mental derangement are of a general or local, a physical or moral nature, so must the treatment be, general or local; physical or moral. And as there is often a combination of causes, so must there also be a combination of remedial measures. *There is no specific treatment of insanity.* In no two individuals are the functional or organic lesions, the symptoms, and the character of the disease precisely alike. Hence, each particular case requires a thorough investigation, before the treatment adapted to it, can be fairly laid down. On this account, we must confine ourselves to such general rules of treatment as are more or less adapted to all; leaving the particular application of them to the discretion of the practitioner, after he has studied the individual case.

We have seen that lesion of the sensations, and of the power of association, through defective attention, produced and kept up the hallucination, as well as the perversions of the passions. Every thing, therefore which can modify the thinking faculty, and control the passions, is an object of the *moral* treatment.

The first question bears on *separation* of the insane from friends and home. On the necessity of this measure, the English, French, and German physicians are unanimously agreed. Willis observed that foreigners were more certainly cured in England than the natives. We find the same thing in France. Strangers, sent to Paris for treatment, are more readily restored to reason, than inhabitants of this city.

> "The first effect of separation is to produce a train of new sensations, excited by new objects; and thereby to dissever, more or less, the series of incongruous ideas, from which the patient was previously unable to extricate himself. The consequence is, that he becomes, at this period, more accessible to advice or remonstrance; in short, there is an evident remission of the hallucination, which should be immediately seized on by the physician, for the purpose of gaining the confidence of the patient."

When the insane patient is placed in a proper receptacle, he ought to be under the guidance of one, and *only one* person—and that a physician. Reil, and some others who conceive that there should be a physician, a psycologist, and a moralist in superintendance on the insane, have no practical knowledge of the subject, and know nothing of the inconvenience, not to say mischief, attending such a triumvirate power. To the medical chief, the domestic attendants must exhibit perfect examples of deference and obedience, for the imitation of the patient; while they themselves wear the appearance of strong delegated power, which will generally render the exercise of it unnecessary, by convincing the insane that all idea of resistance is vain. Interviews with parents and friends must be very cautiously permitted—for the deranged are great children, and children too, whose false ideas have taken a wrong direction.

> "Confined thus to a regular life, and an exact discipline, they are naturally led to reflect on this change in their situation; while the necessity of dwelling among, and submitting to the control of strangers, is to them a powerful stimulus to regain their lost freedom and reason."

Some of the insane, on being transferred to a strange place, believe themselves abandoned by their parents and friends. Let the balm of consolation be then poured into their breasts—let them be promised every assistance in once more uniting the bonds of social existence, and they will pass from the gloom of despair to the sunshine of hope. This contrast of sentiment, arising out of the presumed abandonment of friends, and the soothing attention of strangers, produces an internal conflict, from which reason sometimes comes forth victorious. Others imagine that they are conducted to these strange habitations to be delivered up to their enemies, or to be sacrificed. If these fears can be conquered by the kind, affable, and humane conduct of those around them, a recovery may be confidently expected.

> "The judicious exercise of the faculties of the alienated, conduces much to recovery. This must be done by directly excited the *attention* of the insane—by presenting new objects to their contemplation—by giving way in some measure, to their hallucination. If, by these means, their confidence can be gained, the cure is almost certain."

The *passions* of the insane must be carefully managed. The proud and rebellious passions and emotions must be tamed and kept in subjection, while the timid and melancholy are to be dissipated by encouragement. The art of inspiring *fear* is not of easy management; and ought never to be confided to servants. Many maniacs are incapable of sleeping, while under the depressing influence of fear. This may often be obviated by causing some person to sleep in the room with them, or by leaving a light in their chamber.

It is sometimes proper to substitute a real for an imaginary grievance. Thus a melancholic is devoured with *ennui* in the midst of the pleasures and enjoyments of life. If we withdraw him from his usual habits, and impose on him *real* privations, he will then suffer *real* ennui, which will prove a powerful mean of cure.

> "Another believes himself abandoned by his friends, though they are all endeavouring to contribute to his happiness. Deprive him of every testimony of their affection, then he awakes to a sense of his *real* loss, and this is one step towards recovery. Even *physical* sufferings occasionally divert the malady from its mental seat, and relieve the moral evil."

Sometimes the excitive passions, as love, ambition, may be dexterously brought to bear on insanity.

> "A melancholic was in a state of great despondency. He was told that he had a lawsuit on hand. The anxiety to defend his suit soon

restored his intellectual energy.—A soldier became deranged in mind. He was told that the campaign was about to open. He demanded permission to rejoin his regiment—was forwarded to head quarters, and arrived there in perfect sanity. In short, the examples are innumerable, of the vast influence of our moral over our physical nature. But the character, disposition, and history of each individual, must be carefully studied, in order to manage the moral treatment with success. Music, well managed, acts with considerable power both on the moral and physical frame. There should be but few instruments, the music placed at a distance, and composed of airs with which the patient was familiar in youth; or which he relished before the mental derangement."

Travelling is a useful remedial measure, in many cases. M. Esquirol has always found the complaint mitigated after a long journey, especially if attended by difficulties and privations, and performed through a strange land, where the attention of the insane was strongly excited.

Travelling is also salutary, in a physical point of view. It rouses the torpid functions, particularly those of the abdominal viscera—conduces to sleep—improves the digestion and the secretions. It is, above all, a useful mean of securing convalescence and recovery. Such are the general indications of the moral treatment of the insane. They have for their final object—to force the *maniac* to live *within* himself—the melancholic *without* himself.—"Ils ont pour but d'obliger le maniac à vivre *en lui-meme*, tandis qu'il faut faire vivre le melancholique *hors de lui.*"

Hygiene and Pharmaceutics. The insane should have the benefit of free air and ample exercise. Those who are taken ill in a hot country recover best in a cold. Nostalgics, on the other hand, cannot be cured without return to their native soil.

The clothing of the insane, especially of the melancholics, should be warm, so as to encourage and maintain the insensible perspiration. It is an error to imagine that the insane should be deprived of fires, and kept in cold habitations. The administration of food requires much attention. The insane generally devour their victuals with great voracity, and without sufficient mastication. This injures their digestion, and keeps up a source of irritation in the whole line of the alimentary canal. Thirst is also common; therefore, the patient should never be without drink. Wherever there is excitement, the food must be unirritating and small in quantity. Constipation being a very common attendant, the bowels should be seduously attended to; and all the secretions and excretions promoted by every possible means. For these purposes, exercise in the open air, active or passive, must form a *sine qua non* in the treatment. Every one knows the story of the Scotch farmer, who acquired great celebrity in the cure of the insane. He first took them out to walk with them in his fields, then contrived to quarrel with them, beat them soundly, and afterwards yoked them to the harrow, and made them work like horses!

Gardening is an occupation universally applicable to the lower orders of society, and of the greatest use in this complaint. In the upper walks of life, we are obliged to substitute the promenade, music, reading aloud, &c.

To apply *medicines*, with effect, we must first unravel the whole history of the individual and the complaint—ascertain the causes, general and local, which have induced it—the seat, or principal organ affected—whether it is the physical which has first acted on the moral, or the moral on the physical system. What infinite mischief has been done by *Routinists*, in this disease; who, in the sweeping term "insanity," could see but a *single* affection—derangement of the mind!

When we have combated the general dispositions, and the effects of particular morbific causes, and still the mental alienation continues, then we are authorized in attempting more specific means of treatment. Till then we must vary, incessantly vary, our remedial measures, according to the species of insanity with which we are engaged. We shall here confine our remarks to certain medicines which have been deemed heroic in this complaint.

Baths have been administered to the insane in every way, and at all temperatures. The warm bath is, upon the whole, the most useful. Patients of a thin, nervous, and irritable constitution, may be kept a considerable time in the water, with great benefit. When there is a strong determination to the brain, the head should be kept encircled with cloths wetted with cold water, while the body is immersed in the warm. Excepting where the patient is young, robust, and complaining of internal heat, the *cold* bath is rarely useful. Where the patient's constitution is debilitated by unmanly excesses, the mere *plunging* in cold salt water is occasionally serviceable. Cold *affusion* from a cock or funnel, is sometimes proper; but requires great caution. It is most adapted to young and unruly patients, with determination to the brain.

At the commencement of insanity, where there is headache, redness of eyes and face, throbbing of the carotids, &c. *cold*, locally applied to the head, after leeching or cupping, while irritating pediluvia are also employed, produces salutary effects. The bowels should be kept clear by daily glysters of water alone, or water containing purgative ingredients. This measure is too much neglected in England.

Emetics are entitled to considerable rank, especially in melancholia, and where diminished sensibility and torpor prevail. They are dangerous, however, in opposite states of the system, and where there is erythism of any organ or part.

Purgatives are exceedingly useful, especially those which act on the biliary secretion, and tend to produce the hæmorrhoidal movement and discharge. Purgatives sometimes produce irritation in the system, and interrupt the free functions of the skin. Whenever this is perceived; they should be alternated with the warm bath. A certain degree of irritation in, and determination to, the abdominal viscera, from purgatives, is, however, very useful; and it is, in this way that helebore, gamboge, and other drastic cathartics, have acquired celebrity.

" *Blood-letting* was formerly carried to a most culpable excess. It is indispensible in plethoric subjects, and especially where any long-accustomed hæmorrhage or other evacuation has been suddenly suppressed; but otherwise, *local* blood-letting may almost entirely supersede the lancet in insanity."

Camphor, musk, tonics, antispasmodics, mercury, &c. are all occasionally useful, in individual cases, especially where the *general* indications have been previously attended to; but they are incapable of universal or indiscriminate application.

Opium. As maniacs sleep badly, opium and other sedatives have been employed; but they are now proscribed by unanimous consent, as dangerous remedies. Regimen and exercise are the only somniferous measures which can be safely recommended. They are generally successful too.

" Setons, blisters, and counter-irritants, are useful where there has been a metastasis : in monomania, with stupor ; in puerperal mania, and sometimes in dementia, or fatuity. It has been recommended to blister, or otherwise excoriate the whole surface of the head. I confess that such measures have not succeeded in my hands. They augment the erythism, torment the patient, increase his irritability, and convince the insane that he is a victim to our cruelty. The swing is occasionally useful in refractory cases."

In respect to the *prevention* of insanity, much might be done by avoiding intermarriages with the insane; by directing the education of youth on stricter principles of religion and morality; by indulging less the caprices and whimsical desires of children, which indulgence unfits them for the rugged journey of life; by not forcing too early the organ of the mind with tasks and exertions beyond its power; by training youth in early regimen and temperance; and, above all, by repressing and controlling each unruly passion as it developes itself from childhood upwards.

In presenting our readers a portrait of this distinguished foreigner's opinions and practices in insanity, we hope and trust that we do a greater service to the cause of medical science, in this country, than by collecting a mass of ephemeral cases, and fleeting speculations, most of which expire in the very cradle of their existence, and few of which have substantial attractions for re-perusal or reference. Under this conviction we shall make a point of introducing classical and standard articles of Foreign Medical Literature, from time to time, to the English reader, through the medium of this Journal.

Principles of Military Surgery, comprising Observations on the Arrangement, Police, and Practice of Hospitals; and on the History, Treatment, and Anomalies of Variola and Syphilis. Illustrated with Cases, Dissections, and Engravings. By JOHN HENNEN, M. D. F. R. S. E. Deputy Inspector of Military Hospitals. Second Edition, with numerous Additions. One volume Octavo, closely printed, pp. 580, with six Plates. London and Edinburgh, 1820

[From the London Medico-Chirurgical Review, of Sept. 1820]

In the monthy Series of this Journal, we gave a full account of the first edition of the valuable work now before us. In this edition, the quantum of matter is nearly doubled, by means of concentration and small type, while the price is but little increased. As it now stands, there is no other work on Military Surgery, in the English language, at all to be compared with Dr. Hennen's volume. This distinguished medical officer has added to an extensive stock of personal experience and observation, a vast mass of important facts and observations, from his military, naval, and civil brethren, combined with a selection from the best authors of our own and other times, all bearing on military surgery in particular; but, in truth, embracing surgery in general, and elucidating all its leading principles and operations. Such a work must prove an invaluable acquisition to the practitioners in the army and navy; and, indeed, to surgeons in general, to whom we can safely recommend it as a standard production.

In the present article, we shall confine ourselves to the subject of syphilis—a subject which so much divides the sentiments of professional men, and on which Dr. Hennen, from his official situation, and his access to authentic documents, is particularly well qualified to write. Our own experience in the non-mercurial treatment of syphilis having been very limited, we shall endeavour chiefly to exhibit a full analytical view of our able author's paper, leaving it to our readers to judge and act for themselves, after weighing the evidence here adduced.

Dr. Hennen enters into a pretty extensive historical sketch of the various other remedies besides mercury, which have been extolled, from time to time, as specifics. This, he thinks, can only be accounted for, by supposing that the disease was curable by the efforts of the constitution alone; otherwise, inert and trifling medicines could never have acquired the reputation of being anti-syphilitics. But there is another point of view, in which the subject may be taken, and in this we are strongly disposed to coincide with Dr. Hennen.

> "It may be, that such an alteration has been produced in it either from the effects of remedies, or by natural causes, as seriously to influence the results of our treatment at the present day. The analogy of leprosy and of scurvy, which at one time raged throughout Europe, but are now almost unknown, is strongly in favour of the supposition of a change of character in syphilis; we have also direct testimony, which shows that its symptoms have become milder and more tractable." 496.

Dr. H. quotes several authorities for this supposition; among others, the learned and indefatigable Astruc himself, who, nearly a hundred years ago, says—

> "I have, by careful and repeated observation, found the venereal disease daily to grow milder; it may, perhaps, be more frequently contracted than formerly, yet its rage is less violent, its symptoms are not so many, so painful, nor so difficult to be cured; it yields more readily to remedies properly applied; and, in a word, seems by little and little to approach towards its close."*

"The following note, containing very curious matter, we shall extract from Dr. Hennen's work.

> "From some extracts from the rare volume of Ruy Diaz de Isla, "Contra las Bubas," Salamanca, 155—with which Dr. Thomson, Professor of Military Surgery, has favoured me, I find that, in no town in Europe, of one hundred inhabitants, were there fewer deaths than ten on the first appearance of syphilis among them. Now, if we recollect that the numerous monks and nuns spread the disease through all classes of society, it is not an extravagant calculation, that fifty out of the hundred were poxed. This will give us one death in five: the remaining four survivors must have owed their lives to the "methodical or rational" cure. I doubt whether the mortality was greatly less than this, while the gross abuses of mercury prevailed, under the form of daubings, with four lb. of quicksilver to two lb. of lard, applied over the whole body, "Cum quo (says Torella) infinitos interfecerunt, interficiuntur homines, non moriuntur." (Luisin, tom i. p. 528.) But, putting the mortality out of the question, Hutten expressly states, that hardly one in one hundred was perfectly cured, the disease re-

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* Astruc, lib. 1, cap. 13. Hennen, p. 497.

turning upon them again, as it did on himself after eleven salivations. (See Ulrichus de Hutten de Morbo Gallico apud Luisinum, cap. 4. tom. i. p. 281 and 283;) but after guaiacum was introduced, only one individual died in Germany while under its use, and his death was attributed to excess in venery." 498.

If the latter part of the above passage be true, (which we much doubt) then guaiacum, as well as syphilis, has lost some of its pristine powers.

Speaking of the opinion entertained by several of the present day, and once prevalent all over Germany, that the diseased state of the bones, in protracted syphilitic cases, is the effect of mercury, and not of the venereal virus, Dr. Hennen remarks,

"It becomes a point well worthy of inquiry, whether mercury produces diseases of the bones where a predisposition to these diseases does not exist. I am well convinced that the carious affections of the bones, which are so common in persons treated by long mercurial courses, have proceeded, not from the disease, but from the remedy rapidly and irregularly thrown in while periostitis existed; as a proof of which, I have not seen a single case of carious bone in the military hospitals since the non-mercurial treatment was adopted, except where mercury had formerly been used, so that those gentlemen who so kindly and compassionately harangued on falling noses and rotten bones, have displayed their sensibility in vain." 506.

Upon this we can only remark, that as we have seen mercury used to a great extent, and among whole masses of men of various constitutions, without these diseases of the bones supervening, we cannot but suspect that the syphilitic virus is the principal cause of such formidable affections.

The observation of Leo Africanus, nearly three hundred years ago, that lues venerea undergoes a cure by change of climate in Africa, without the employment of mercury or other medicine, is confirmed, Dr. H. thinks, by the recent traveller, Horneman; but we confess, that the extract brought forward from this gentleman, has nothing very satisfactory for our minds.

"Dr. Mitchell, of New York, in the Medical Repository for 1799, assures us, that a great number of venereal ulcers were cured in the hospitals of that city, by the local application of potash, or salt of tartar, from which fact he draws the very natural conclusion, that neither nitrous acid nor mercury produced any *specific* effect upon these ulcers." 508.

Our author, after enumerating the various morbid affections produced by mercury, when either profusely used, or in unfavourable constitutions, observes:—

"While I have thus enumerated many of the ill effects produced by mercury when it acts as a poison, I must give my strongest testimony to the admirable results which proceed from its judicious use in persons not constitutionally disposed to be injured by it, and who do not lead profligate lives, or are not exposed to the foul air of hospitals fully saturated with its fumes." 512.—"Of its unquestionable efficacy there can be no doubt; but its indiscriminate employment in every case, whether old or recent, suspicious or confirmed, and without any view to the patient's diet, or his general health, has produced the most dreadful consequences." 513.

This, indeed, we have all along considered to be the real state of the case. The *abuse* of the medicine is to be deprecated; not its rational use. Dr. H. properly observes, that the precepts of Hunter, Abernethy, Pearson, Carmichael, and several others, have reduced the quantity of mercury formerly given in syphilitic affections.

"But it remained for the inquiry which is at present prosecuting in the military hospitals, to show, that even these bounds are too extensive, and that the practitioner has, in a vast number of instances, the option whether to defer its use, to limit it, or to omit it altogether.—Settled as it now is, beyond a doubt, that syphilis does not run on uninterruptedly to a fatal event, if not checked by mercury, that practitioner cannot be admitted to do full justice to his patient, who does not avail himself of the fact—to his own judgment must be left the extent to which he may be pleased to do so."

Dr. Hennen candidly confesses his inability to point out "any invariable characteristic symptom by which to discriminate the real nature of the primary sore," while "we are equally at a loss in many of the secondary symptoms."

"It would be by no means difficult to show that the high round edge, the scooped or excavated sore, the preceding pimple, the loss of substance, the hardened base and edge, whether circumscribed or diffused, and the tenaciously adhesive discharge of a very fetid odour, are all observable in certain states and varieties of sores unconnected with a venereal origin. The hardened edge and base, particularly, can be produced artificially, by the application of escharotics to the glans or penis of a sound person; and if any ulceration or warty excrescence previously exists on these parts, this effect is still more easily produced." 517.

What, then, are the practical steps to pursue in diseases produced by sexual intercourse! We shall lay the precepts of our able and experienced author before the reader.

"1st. In every primary ulcer, I would give up the idea of using mercury at first, treating it as if it were a simple ulceration, by cleanliness, rest, and abstinence, and applying to it the most simple and mildest dressings.* If the sore did not put on a healing appearance in a reasonable time, the extent of which must depend on the circumstances of the patient, I should make use of more active dressings. But if, beyond all calculation, it remained open, I should certainly not sacrifice every consideration to a dislike of mercury, knowing how many persons have been seriously benefited by a judicious and mild administration of that remedy. 2d. The same principles which guide me in the primary ulcers, would have the same, if not greater force, in the case of buboes. In their irritable state, I consider mercury as altogether inadmissible.

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* A very early application of lunar caustic will often supersede all other remedies.

> Moderate pressure, and cold applications, will often disperse them in their commencement, aided by Girtanner's plan of frictions of volatile liniment on the thigh of the affected side. If they suppurate, opening with the kali purum is by far the best plan; they then heal from the bottom. 3d. The cutaneous eruption I would treat at first on the same general principle, but I should not very long postpone the employment of the mildest mercurial alteratives, aided by warm bathing and sudorifics. 4th. In the affections of the throat I would be more guarded than in any others in the employment of mercury, until all inflammatory disposition was removed; after that, I have seen them yield, as if by magic, so soon as the local effects of the mercury on the parts within the mouth became obvious; but before the inflammatory symptoms were subdued, I have seen a vast number of instances where irremediable mischief has been done. 5th. In the bone cases, during the stage of periostitis, or any approach towards it, local bleeding, blistering, warm bathing, and abstinence, are the proper remedies, to the entire exclusion of mercury. When inflammation is subdued, that remedy may be tried in moderation; but if caries exist, I hold it to be highly improper under any form" 519.

Our author states, that so far has delay been from injurious, in the cases under his inspection, that the sanative powers of mercury were remarkably assisted by the preparatory regime of cleanliness, rest, rigid abstinence, purgatives, sudorifics and venesection, where deemed necessary. This was particularly remarkable where the genital ulcerations were irritable and extensive, threatening the destruction of the organ; or where the throat was severely affected. The extent of the delay in administering mercury, must depend on the individual case. In delicate phthisical habits there is no necessity for haste.

> "At the same time, no person in private practice, whose constitution could tolerate mercury, would willingly continue to bear about his person those suspicious-looking stains and eruptions on the skin, which a judicious employment of that remedy so often relieves." 519.

While, therefore, great pains were taken to ascertain how far mercury could be safely dispensed with in the treatment of syphilis, no patient's constitution was involved, nor practitioner's character compromised in the experiment.

> "In no case, (says Dr. Hennen) I most firmly believe, has the health of an individual been wantonly trifled with, nor has the utmost professional exertion been spared to elucidate the history of this most interesting and most common of all military diseases, even in the persons of some of the professional men themselves."

This, we have the strongest reason to believe, is strictly fact. That any *external* applications of mercury could have had any constitutional effect on the disease, is quite untenable; indeed, cold water alone was used by a great many of our military surgeons. It is well known that the appearance of genital ulcerations is much modified by their locality. This should be always borne in mind. The following circumstances were generally remarked in the military hospitals.

> "1. Ulcers on the external integuments have generally had round callous edges, level surfaces, but little induration of base; they were less irritable than others, became sooner clean, and healed uniformly, but slowly. 2d. Ulcers on the internal membrane of the prepuce have been generally either superficial or elevated; their surfaces covered with a light-coloured slough, or of a bright red, with a villous appearance; their edges either regularly defined, or spread out like excoriations; their bases have been, in general, but little indurated, but when the ulcers have spread out, they have sometimes acquired a cartilaginous hardness, and have been extremely difficult to heal. 3d. Ulcers immediately behind the corona glandis have been, in general, highly irritable, deep, scooped, indurated in their edges and base, foul, with membranous bridles, running across them, throwing off a perceptible slough, but, if mildly treated, soon healing after that event. 4th. Ulcers on the frœnum have generally followed lacerations of that part, have had considerable induration of base, and have been generally slow of healing. 5th. Ulcers of the glans have been generally excavated, but with little hardness of base, quickly throwing off a slough, and then healing rapidly." 524.

Dr. Hennen mentions a curious fact, which should be held in memory, especially by the military and naval surgeon. It is this—that the hardened edge and base *naturally* attending some ulcerations "may be artificially produced by the application of the kali purum to a sound man;" and this sore "is not to be distinguished from chancre by a person not acquainted with the circumstance." Even the specific distance (as it has been called) of the hardness can be increased or diminished, by proper management of the caustic.

Dr. Hennen finally comes to the conclusion, that primary sores on the genitals, of whatever description they may be, can be healed without the employment of mercury; nor has he met with any thing to make him question the propriety of making the trial. The same observation, to a certain extent, is applicable to the secondary symptoms that have succeeded the non-mercurial treatment; but here our author cannot offer such positive testimony to the expediency of abstaining from mercury altogether.

> "The facts at present ascertained are these:—Secondary symptoms occur more frequently, and appear at an earlier and more determinate period than when mercury had been used; but they, in many cases, have gone off as soon, never, as has been supposed, proceeding from bad to worse, or from one succession of parts to another in unabated violence; on the contrary, they by no means exhibit the same violent and unrelenting symptoms which we have observed, in many instances, where mercury has been used; the eruptions have not run into ulceration; they have not formed into large scales or extensive blotches; nor have the bones of the nose, or of other parts, been in any instance affected with caries. I cannot take upon me to assert, that these events

will not occasionally take place, but in the numerous cases which I have watched with the utmost anxiety, I can aver that they *have not*." 527.

Eruptions on the skin, Dr. Hennen thinks, have been more frequent since the non-mercurial treatment has been in use; but the general health did not appear to suffer more than when similar eruptions succeed the mercurial treatment, and they all gradually, though sometimes slowly, disappeared without the use of mercury. In some cases of the cutaneous eruptions, Dr. H. observed considerable benefit from the mineral acids, used both internally and externally. In no case were the bones of the nose affected, though occasional instances of periostitis, and of pains and swellings of the bones of the cranium, and of the extremities, were met with. Only two *unequivocally syphilitic* nodes were observed. One of these gave way to blisters and sarsaparilla; the other was treated with mercury.

We shall now introduce a series of analytical tables, drawn by our most intelligent and indefatigable author, from the practice of the regimental surgeons, in those corps of the army which were quartered in Scotland, during a considerable portion of the time that he held the superintendence of that part of the united kingdom.

Analytical Return of Venereal Diseases, treated without Mercury, in the Military Hospitals of Scotland, under the Superintendance of John Hennen, M. D. Deputy-Inspector, from June 20th, 1817, to December 20th, 1819.

PRIMARY AFFECTIONS.

1. *Description of Cases that have been Treated.*

A. Affections possessing the true Hunterian character.	*a.* Ulcers only			109	167
	b. Buboes succeeding to Ulcers.	α. Before admission into hospital	48	58	
		β. After admission into hospital	10		
		γ. Of which were discussed	42		
		δ. Of which suppurated	15		
		ε. Under cure at the date of last return	1		
B. Affections of various kinds not possessing the true Hunterian character.	*a.* Ulcers only			154	240
	b. Buboes succeeding to ulcers.	α. Before admission into hospital	72	84	
		β. After admission into hospital	12		
		γ. Of which were discussed	53		
		δ. Of which suppurated	31		
	c. Buboes without previous ulcer			2	
Total number of Primary Affections treated					407

2. *Time required for the Cure.*

A. OF ULCERS.

Hunterian.		Non-Hunterian.	
The following number of cases were cured.	In the following number of days.	The following number of cases were cured.	In the following number of days.
36	From 5 to 10	63	From 3 to 10
19	11 20	40	11 20
42	21 30	43	21 30
13	31 40	10	31 40
13	41 50	5	41 50
5	51 60	1	51 60
1	71 80	1	61 70
2	91 90	2	71 80
4 under cure at the date of last return.		4	81 90
		1	93
		1	109
		1	113
		18 under cure at date of last return.	

B. OF BUBOES ENDING IN RESOLUTION.

Buboes following Hunterian Ulcers.		Following Non-Hunterian Ulcers.	
The following number of cases were cured.	In the following number of days.	The following number of cases were cured.	In the following number of days.
5	From 5 to 10	10	From 2 to 10
8	11 20	18	11 20
15	21 30	13	21 30
4	31 40	4	31 40
8	41 50	4	41 46
2 under cure at the date of last return.		4 under cure at the date of last return.	

C. OF BUBOES ENDING IN SUPPURATION.

Buboes following Hunterian Ulcers.		Buboes following Non-Hunterian Ulcers.	
The following number of cases were cured.	In the following number of days.	The following number of cases were cured.	In the following number of days.
2	From 30 to 40	1	From 7 to 10
3	41 50	2	11 20
2	51 60	5	21 30
2	61 70	3	31 40
1	77	4	41 50
1	92	3	51 60
4 under cure at the date of last return.		1	71 80
		3	91 100
		2	101 110
		2	111 113
		1	179
		4 under cure at the date of last return.	

Note. In the Table A. of Ulcers, the period of cure of some of these affections is not specified, as it was not fully ascertained from some corps; but in no case did it extend beyond the average period of the cases which are specified in the Table.

SECONDARY AFFECTIONS.

1. *Description of Cases treated.*

A. Succeeding the Hunterian ulcer.	*a.* Eruptions only.	α. Tubercular	6	15	24
		β. Exanthematous	5		
		γ. Pustular	2		
		δ. Tubercular and Scaly	1		
		ε. Tubercular and Vesicular	1		
	b. Eruptions combined with sore throat.	α. Tubercular	2	4	
		β. Tubercular and Scaly	1		
		γ. Tubercular and Exanthematous	1		
	c. Tubercular Eruption combined with Iritis			1	
	d. Tubercular and Papular Eruption, combined with Iritis, Periostitis, and Sore Throat			1	
	e. Tubercular and Exanthematous Eruption, combined with Periostitis			1	
	f. Sore Throat only			1	
	g. Exostosis only			1	
B. Succeeding ulcers not Hunterian.	*a.* Eruptions only.	α. Pustular	6	12	22
		β. Exanthematous	3		
		γ. Tubercular	2		
		δ. Tubercular and Scaly	1		
	b. Eruptions combined with sore throat.	α. Exanthematous	3	7	
		β. Tubercular	2		
		γ. Papular, Scaly, and Tubercular	1		
		δ. Pustular and Tubercular	1		
	c. Sore throat only			3	
Total number of Secondary Affections treated					4

II. *Period of Occurrence, and Time required for the Cure.*

Description of Primary Affections to which they succeeded.	No. of Cases.	Description of Secondary Affections.	Period of occurrence after Primary Affection.	Time required for the Cure.
A. Succeeding the Hunterian Ulcer.	6	Tubercular Eruption - - -	From 7 ds to 6 ms	From 10 to 60 ds
	5	Exanthematous Eruption - -	—— 28 ds to 6 ms	——3 to 42 ds
	2	Postular Eruption - - - -	—— 21 ds to 38 ds	—— 18 to 43 ds
	1	Tubercular and Scaly Eruption	40 ds	25 ds
	1	Tubercular and Vesicular Eruption - - - - - - - -	22 weeks	27 ds
	2	Tubercular Eruption with Sore Throat - - - - - - -	—— 46 to 75 ds	—— 31 to 240 ds
	1	Tubercular and Scaly Eruption with Sore Throat - - -	5 weeks	66 ds
	1	Tubercular and Exanthematous Eruption with Sore Throat	2 ms	60 ds
	1	Tuberculur Eruption combined with Iritis - - - - - -	14 weeks	45 ds
	1	Tubercular and Papular Eruption, combined with Iritis, Periostitis, and Sore Throat	45 ds	84 ds
	1	Tubercular and Exanthematous Eruption, combined with Periostitis - - - - - - - -	5 ms	28 ds
	1	Sore Throat only - - - -	5 weeks	33 ds
	1	Exostosis only - - - - -	74 ds	14 ms
B. Succeeding Ulcers not Hunterian.	6	5 Pustular Eruption - -	From 49 to 320 ds	From 19 to 58 ds
		1 Pustular Eruption - -	5 ms	Under cure date of last return
	3	2 Exanthematous Eruption	——90 to 240 ds	From 28 to 120 ds
		1 Exanthematous Eruption	298 ds	Under cure date of last return
	2	Tubercular Eruption - - -	——23 to 122 ds	From 26 to 35 ds
	1	Tubercular and Scaly Eruption*	19 ms	Under cure date of last return
	3	1 Exanthematous Eruption with Sore Throat - - -	Simultaneous with the Ulceration	29 ds
		1 Exanthematous Eruption with Sore Throat - - -	4 weeks	42 ds
		1 Exanthematous Eruption with Sore Throat - - -	59 ds	Under cure date of last return
	2	Tubercular Eruption with Sore Throat - - - - - - - -	——75 to 91 ds	From 14 to 31 ds
	1	Papular, Scaly, and Tubercular Eruption, with Sore Throat*	20 ms	Under cure at the date of last return
	1	Pustular and Tubercular Eruption with Sore Throat - -	68 ds	
	3	Sore Throat only - - - -	——50 to 77 ds	From 43 to 63 ds

* Primary Affections Cured by Mercury at a former Period.

To complete our paper on the subject, we shall here introduce the following important and highly interesting document circulated by the Army Medical Board among the surgeons of the army at large, and which cannot but be read with the deepest interest by every private practitioner.

(Copy) " *Army Medical Department,*
2d April, 1819.

" *Circular.*

" ON SYPHILIS.

" In transmitting the following summary of the conclusions on the question of syphilis and its treatment, we have to assure all that it may be considered as an unprejudiced statement drawn up from the answers *alone* of the regimental surgeons, to the queries transmitted by us to them in December last.

" *Without Mercury.*

" 1st. That since December 1816 to December 1818, there appears to have been treated for primary venereal ulcerations on the penis (including not only the more simple sores, but also a regular proportion of those with the most marked characters of syphilitic chancre, as described by Hunter and other writers) 1940 cases.

" 2d. That of these 1940 cases so treated, 96 have had secondary symptoms of different sorts.

" 3d. That in these 96 cases of secondary symptoms following sores treated without mercury, it was deemed necessary to have recourse to mercury for a cure of twelve of them; for which change, the following different reasons are assigned, in different cases, by the surgeons who treated them.

" *a.* On account of sloughing ulcers in the throat.
" *b.* The protraction of cure beyond the third week.
" *c.* Because the general health seemed to suffer.
" *d.* With a view of expediting the cure.
" *e.* The re-appearance of eruptions, or aggravation of symptoms.

" *Note.*—In several of these 12 cases, alterative doses of mercury were sufficient to effect the cure.

" 4th. That in 1940 cases of primary symptoms treated without mercury, (as described in par. 1st.) its use was resorted to in 65 of them; the reasons assigned being as follows:

" *a.* An indisposition to yield to the local application in three weeks.
" *b.* The sore spreading.
" *c.* The appearance of fresh sores.
" *d.* Buboes suppurating, and not disposed to heal.
" *e.* The general health appearing to suffer.
" *f.* A belief that the constitution became affected from the continuance of the sores.

" 5th. That these 1940 cases, treated, as here above stated, are now 'recovered of their venereal complaints,' and either doing their duty as soldiers, or have been discharged, for military reasons, totally unconnected with venereal disease.

" 6th. That the principal remedies employed have been (speaking in general terms, and with reference to primary sores) confinement to bed in many cases, in all to hospital, spoon diet, occasionally general bleeding when inflammation ran high, (in six or eight cases,) purgatives, antimonials, pretty generally emollient soothing applications in the first instance, generally cold or warm water, (the latter, frequently injected between the prepuce and glans,) and the first externally applied, the water frequently mixed with the liquor plumbi; in the latter stages, the lotio hyd. submuriat. or muriat. in aqua calcis, lotio sulphat. cupri, argent. nitrat, &c. were employed. With reference to secondary symptoms, when mercury was not had recourse to, purgatives, antimonials, nitric acid, sarsaparilla, guaiacum in substance, or in combination with sarsaparilla, warm bath, nitro-muriatic acid bath, gargles when the throat is affected. In nodes, fomentations, scarifications, leeches, and blisters.

"7th. That the average period required for the cure of primary symptoms without mercury, when bubo did not exist, has been twenty-one days; with bubo, forty-five days.

"8th. That the average period for the cure of secondary symptoms without mercury has been from twenty-eight to forty-five days.

"9th. That every man treated without mercury has been fit for immediate military duty on dismissal from hospital.

Mercury.

"1st. That during the period specified before, there appears to have been treated of venereal ulcerations of the penis (the characters given of which do not appear to have been, in any essential degree, different from those treated without mercury) 2827.

"*Note.*—'It may be perhaps well to view these as more generally bearing the character of Hunter's chancre.'

"2d. That of the 2827 thus treated and healed, 51 have had secondary symptoms.

"3d. That there are good grounds for believing, that, in the majority of instances, when secondary symptoms have occurred, where the primary symptoms have been treated with mercury, that the secondary symptoms are more severe, and more intractable than when mercury had not been used for the primary sores.

"4th. That one man treated by mercury for primary sores has been discharged the service on account of the injury his constitution sustained therefrom.

"5th. That another man, after treatment for secondary symptoms by mercury, has been discharged the service in consequence of that complaint.

"6th. That the average period occupied for the cure of primary symptoms without bubo, with mercury, has been thirty-three days; with bubo, fifty days; and that the great majority were unfit for immediate military duty on dismissal from hospital.

"7th. That the average period occupied in the cure of secondary symptoms has been forty-five days.

"*Note.*—'The treatment by mercury is so generally known, that it is deemed useless to describe it in either case.' Much the same local applications were used in the treatment with mercury to the sores, as was described in that without it; perhaps more stimulating and escharotic applications were used, and less attention paid to regimen and diet, when mercury was given, at least less stress seems to have been laid on these."

" *General Observations.*

" 1st. From the statement above made it would appear that *all kinds of sores*, or primary symptoms of syphilis, may be cured (as far as a period of nearly two years will warrant the conclusion) without mercury.

" It is considered that the exceptions, noted in paragraph 4th, do not present valid objections to the above conclusions, on viewing the general testimonies on this point; but to the reasons there assigned for the necessity of having recourse to mercury, the most particular attention is required, as on these must the propriety or impropriety of that measure depend.

" 2d. To guard against any fallacy in the comparative estimate of time employed in the cure of primary symptoms with and without bubo, it must be noticed that this is only an average statement; in some individual regiments the period required without mercury has been longer than that with mercury.

" 3d. That it appears that the frequency or rarity of secondary symptoms would seem to depend on circumstances not yet sufficiently understood or explained, although the following fact would tend to the belief that either the constitutions of the men, or the mode of conducting the treatment without mercury, are the causes that possess the greatest influence in their production.

" In one regiment 4 secondary cases out of 24 treated without mercury supervened. In another regiment 68 cases have been treated within the specified time without mercury, all bearing marks of true venereal disease, (and 28 of these especially selected for their decided characters of chancre;) no secondary symptoms of any kind have hitherto made their appearance, and in all fifteen months have elapsed since they were treated.

" To this circumstance most particular attention is required, both with the view of ascertaining if peculiarity of constitution influences the appearance of secondary symptoms, and of pointing out the necessity of attending to the proper selection of local remedies adapted to the different stages and states of the sore, and to the general treatment of the constitution during the time the patients are in hospital, and that whether mercury be used or not.

" 4th. That it appears that no peculiar secondary symptoms are seen to follow from peculiar primary sores.

" 5th. It has been remarked, that, in cases healed without mercury, iritis has been frequently observed as a secondary symptom, in some instances by itself, in others attended with eruptions of different kinds. In these instances, mercury has been generally resorted to with success.

" 6th. These appearances of primary ulcer, and repeated attacks of eruption, are the diseases which have been most frequently observed to succeed the non-mercurial practice.

" 7th. The conclusions arrived at by the additional testimony of many more regiments not included in the number from whence this report has been drawn up, confirm, in every material circumstance, the results stated under both methods of treatment.

" From all that has been reported to us, we see no reason to stop the prosecution of the present inquiry, nor have we any objection to its being continued, but strictly in that spirit of patience, liberality, candour, and fidelity, that ought to characterize the inquiries after truth; a spirit altogether remote from the precipitancy of innovation, the acrimony of disputants, or the stickler for any particular doctrine.

"1st. It is therefore desired, that the queries heretofore submitted, with these additional points left undecided in this letter, may be considered as the leading objects for consideration in the future prosecution of the subject.

"2d, That every syphilitic case, whether secondary or primary, be duly entered in the register, with full description of the characters of the sores, symptoms, and treatment, so that the results of each half year may be distinctly and clearly stated in the reports required on these occasions; that every man belonging to any regiment, treated in a different regimental hospital to his own, shall invariably be reported through this office to his own regimental surgeon, who will duly register the report, and at the half yearly periods, state the results.

"That it is essentially necessary that each regimental surgeon keep a watchful eye over all men treated without mercury, and frequently examine them, and that whenever answers are required to these queries at a future period, which they will, (say the 1st. January 1820,) the state of the men now reported shall at that time be distinctly referred to, in the same tabular form as was required by the late queries, commencing as before from 20th December 1816.

"We wish it to be distinctly understood, that we do not enforce the non-mercurial plan of treatment in any case, still farther is it from our wish to incur any unnecessary risk or danger to the soldiers, by unnecessary detention from duty, from a protracted treatment without mercury, in those cases where it has been begun. At all times, this is left to the discretion of the surgeon, who, we are persuaded, will act in the most conscientious manner for the good of his patient, and the interests of the service."

(Signed) 'J M'GRIGOR,
'W. FRANCKLIN."

Dr. Hennen here enters into a vindication of the non-mercurial practice as far as regards the recent objection made by Dr. Hamilton, jun. who "conceives that very alarming consequences are likely to arise to children yet unborn, from the practice of the army surgeons." It is well known, as Dr. Hennen remarks, that there are various opinions on the subject of the venereal disease of the fœtus in utero; some contending that the *mother*, not the father, communicates the disease to the embryo; others, that it is the father, not the mother; a third party contend that the infant may be affected by both father and mother; while John Hunter denies the possibility of the fœtus in utero being affected by either. Impressed with the difficulty of forming a decided judgment upon so obscure a subject, Dr. Hennen first states his speculative opinions, and then details such facts as he has been able to collect.

"Unless a man has primary symptoms himself, I apprehend it is physically impossible for him to communicate primary symptoms to a female. Unless a female has primary symptoms, I hold it equally impossible for her to have secondary symptoms; and except she has secondary symptoms, she, I apprehend, cannot communicate them to the children in her womb; she may, indeed, as we all know, communicate primary sores to the fœtus in its passage through her vagina." *550.*

Numerous instances, Dr. H. observes, are on record, where women having secondary symptoms, bring forth healthy children; and where fathers who have long had secondary affections beget perfectly sound offspring.

> " That children are born with a disease *supposed* to be syphilis, and that this disease is not only fatal to them, but can be communicated by them to their nurses, and be propagated by the nurse to the destruction of more lives is a fact that no man can pretend to deny. The nurse, however, must have a primary sore on her nipple or elsewhere, before she can disease the child. I know it to be a positive fact, that a nurse with secondary symptoms may suckle children with perfect impunity to them."

We ourselves have lately seen some children born with all the appearances of syphilitic defœdations, which defœdations disappeared by mild aperients without any mercury. This, indeed, does not prove that they were but syphilitic affections *in appearance*; it only goes to prove, that these congenital diseases are curable without mercury. The above facts render it extremely doubtful from which of the parties the disease is transmitted; or, indeed, whether it is transmitted by either. Dr. Hennen having circulated a string of queries in Scotland and the northern district of England, relative to this subject, the result is given in a table. The total of children born of parents who had undergone the non-mercurial treatment was thirteen, eleven of whom were born healthy, two were still-born and one has become unhealthy since birth. A woman in the 88th Regt. excited considerable attention in the Ed. Castle Hospital, in consequence of being diseased and pregnant. At the time that the secondary symptoms appeared in her, she was three months gone. She was treated without mercury, and the disease gave way in a little more than three months and a half. She was delivered of a still-born child in the eighth month of utero-gestation, not having felt any movement of the fœtus for two months before. Another woman treated without mercury also aborted of a dead child at the end of the seventh month. In both cases there was considerable abrasion of the cuticle upon the arms and sides, but no distinct eruption. These two cases certainly go towards the corroboration of Dr. Hamilton's doctrine; but two cases can prove little.

In the conclusion of this part of Dr. Hennen's work, he states, from good authority, that the non-mercurial practice has been adopted by some of the naval surgeons with a success even greater than in the army. In one ship fifty patients were treated without mercury, in one only of whom did secondary symptoms appear, under the form of blotches, and they were entirely removed in the course of eight days, without any mercury internally or externally applied. Other testimonies also, from the officers of the army, have recently come to the knowledge of our author "which still farther tend to confirm the principles which he has advocated."

We have now laid a full analysis of this important section of Dr. Hennen's publication before our brethren, which will enable them to judge for themselves respecting the principles and practices therein brought forward.

We have but few remarks of our own to make on this momentous question. We conceive that the *possibility* of curing both primary and secondary syphilis is now beyond the shadow of doubt; and for the ascertainment of this important point we are solely indebted to the Army Medical Board and Officers, who alone could have made the trial on a scale, and with a precision that must carry conviction to the most sceptical mind. For this service to Medical Science posterity will long record the names of her zealous cultivators, in the British army; nor will their liberal cotemporaries withhold the meed of their well-earned approbation.

In respect to the *elegibility* of treating syphilis without mercury, we think that reasonable doubts may be entertained. While the knowledge disclosed in the foregoing documents imperiously indicates the propriety of a far greater restriction in the use of mercury, for the cure of syphilis, than we have hitherto thought proper, so there is nothing in the said documents that fairly goes to contra-indicate a moderate administration of the old remedy, where scrofula, idiosyncrasy of constitution, or other reason do not stand in the way, and induce us to trust to the powers of Nature, assisted by rest, abstinence, and gentle evacuations.

To what we have said of Dr. Hennen's work in general, at the opening of this article, we can add nothing more than our full conviction that it is one of the most practical, useful, and interesting publications which have fallen under cognizance for many years past.

MEDICAL AND PHILOSOPHICAL INTELLIGENCE.

Case of Hydrocephalus, which necessitated Puncture of the Cranium, in order to admit of the Delivery of the Child.—By Dr. Georget.—In this instance, which occurred in a woman, aged thirty, who had previously borne four children without accident, the abdomen of the fœtus was supposed by the midwife to present. But Dr. Georget, on examination, distinguished several of the cranial bones widely separated, and found that the inter-parietal space constituted the presenting point. The excessive volume of the cranium rendering delivery wholly impracticable, it was at length punctured with a large trochar; and four pints of a clear yellowish fluid evacuated. Extraction of the feet was subsequently accomplished without any unfavourable occurrence; and the woman did well. A very accurate description of the external appearance of the fœtus and admeasurement of the cranium are subjoined. The following were the results of its anatomical inspection:—The cavity, empty in its four superior fifths, contained inferiorly the encephalon. The dura mater was intimately connected both with the bones and the intervening membrane. At first sight, it seemed that the serum had been furnished by the exterior arachnoid of the brain; but, after having detached the organ, an entrance was readily made by its superior part into a large cavity, collapsed by evacuation of the fluid, and formed by an union of the three anterior ventricles. Its interior surface was smooth, without rupture, erosion, or external communication. Its superior and posterior parietes were formed by a soft delicate membrane, evidently resulting, in the middle and anteriorly, from distention of the corpus callosum; and laterally and posteriorly, from unfolding of the corresponding cerebral convolutions. The falx cerebri no longer existed. The septum lucidum and fornix were sound; the first directed anteriorly; the second upwards, toward the corpus callosum: so that the communication between the different ventricles was established by the natural openings. The inferior paries of the cavity exhibited, slightly flattened and anteriorly separated, but otherwise unaltered, the corpora striata and optic thalami. A large vein, proceeding from the plexus, passed over the thalamus, and sent off diverging branches in all directions. The inferior parts of the brain, cerebral nerves, cerebellum, and spinal marrow, were sound. The encephalon was *supposed* neither to have increased nor diminished in weight. The author, in his "*Reflections*," shows himself to be decidedly favourable to the physiological doctrines of Gall and Spurzheim. Monstrous, diseased, or malformed fœtuses are, he lastly observes, in general, (as is the case in the present instance,) of the female sex. Is it, he inquires, that this sex possesses less energy of organization than the male? or that the generative power is stronger and more perfect for the latter than the former?

[London Med. Repository for Sept. 1820.

Case of Hernia of the Stomach through the Diaphragm.—By Dr. Lerminier.—A man, aged fifty-two, who, while serving, ten years before, in the army, had sustained a slight lance wound on the thorax, and subsequently fallen from a very high scaffold, complained of languor, indigestion, vomiting, and thoracic pains. On his admission into la Charité, March 8, last, he presented the following symptoms:—Severe pain in the left breast, aggravated by pressure and motion; dyspnœa; infrequent cough, without expectoration; cheeks flushed; tongue whitish and moist; thirst urgent; pulse small; constipation. Left side sounding well, although very painful on percussion. The disease was regarded as simple pleuritis. Blood-letting, mucilages, emollient injections. 9th, no better. Epigastric region painless. Blood without trace of inflammatory buff. Blisters to the legs; purgative injections. 10th. Symptoms aggravated. Blackish blood in the fluid vomited. Death. *Dissection*, forty-eight hours afterwards.—Countenance yet wearing expression of pain. Left thoracic cavity filled with an elastic, blackish, elliptic mass—the stomach and part of the great omentum. The œsophagus, having regularly traversed the diaphragm, turned horizontally to the left above the transverse colon; and, after a course of about two inches, repassed the diaphragm by an accidental orifice, and proceeded in an upward direction with the stomach, the four superior fifths of which were contained in the thorax. The remaining portion of the organ was situated anteriorly to the omentum, and a little to the left of the œsophagus. The stomach, distended by gas, was almost vertically in the thorax, and reached to the level of the second rib. Its two orifices were considerably drawn together, and its curvatures consequently augmented. The thickened membranes shewed the vestiges of vehement inflammation. The internal membrane, especially, was in a state of sanguineous congestion, and rendered four lines thick by the blackish fluid which it contained. The organ in the vicinity of the pylorus tore on the slightest touch; when an extrication of fetid gas and the escape of a bloody fluid ensued. The accidental aperture of the diaphragm, irregularly rounded, with soft, thick, and organized borders, and about fourteen lines in diameter, was distant two inches from the œsophageal orifice, and existed in the aponeurotic portion of the muscle, to the left of the tendinous centre. The heart was driven on the mesial line of the thorax; the left lung greatly compressed, but sound; the right of its ordinary volume. Large intestine filled with indurated fæces. The case is terminated by some reflections, altogether unimportant, and by a reference to analogous facts. In one man, who, about a year since, was received into l'Hôpital St. Louis, and appeared to have an hernia of the colon or omentum, through the diaphragm, there formed, under certain circumstances, a small tumour at the lower part of the thorax, which invariably receded on pressure.

London Medical Repository for September 1820.

Change of Voice by Hydrogen.—Mr. Cooper has ascertained that if hydrogen gas be breathed for a few moments, it has the curious effect of changing the voice. The effect is observed on the person speaking immediately after leaving the vessel of hydrogen, but it soon goes off. No instance has yet occurred in which this effect on the voice has not been produced by the hydrogen.

Jour. of Sciences and the Arts, for April 1820.

Acetate of Alumine.—M. Colin has observed that, if white clay be digested in the pyrolignious acid, before its purification by combination with a base, that it dissolves and diminishes the colour of the acid very much. This solution may be made perfectly colourless by animal charcoal, and is so highly charged with alumine, that it becomes a magma, on the addition of ammonia. The clay had been previously washed with weak muriatic acid. This preparation would probably be of use in dyeing and the arts.

Jour. of Sciences and the Arts, for April 1820.

Preservation of Chrystals.—It is sometimes an object to preserve good crystals of salts, especially with those who are attentive to the study of crystallography. In attaining this end much assistance may be derived from the use of sweet oil. Many crystals, which change and become dull by exposure to air, as alum, sulphate of iron, prussiate of potash, &c.; if slightly oiled, do not then alter in a long time, and many efflorescent substances are prevented from changing by the same means. Even crystals of Glauber's salt will lie exposed to the air for weeks together without efflorescing, if well oiled. The best method is to soak the chrystals in oil for a few hours, and then to wipe them, and put them up in bottles.

Jour. of Sciences and the Arts, for April 1820.

Test for Olive Oil.—If the pernitrate of mercury, made by dissolving 6 parts of mercury in 7. 5 parts of nitric acid, of sp. gr. 1.36., at common temperatures, be mixed with olive oil, in the course of a few hours the mixture, if kept cold, becomes solid, but, if mixed with the oil of grains, it does not solidify. M. Poutet proposes, therefore, this substance as a test of the purity or adulteration of olive oil; for the resulting mixture, after standing 12 hours, is more or less pure. The nature of the white, hard, and opaque mixture, formed by olive oil, and the nitrate of mercury, has not been examined.

Jour. of Sciences and the Arts, for April 1820.

Purification of Water.—The waters of the Mississippi are very turbid, and yet are considered as very healthy. The following simple method of purifying it, is adopted at times. A handful of *Indian meal* is sprinkled on the surface of a pailful of the water, which precipitates the mud to the bottom, and the superincumbent water is left in a tolerable state of purity.—*Schoolcroft*, p. 234.

Burning Spring.—" A phenomenon which has for several years excited the attention of travellers, under the name of a burning spring, exists in one of the principal forks of Lecking river, Kentucky. It is situated about three-fourths of a mile from the banks of the river, and about eighty miles above its junction with the Ohio, opposite Cincinnati. A spring here breaks out at the foot of a hill, forming a basin of water about six feet in diameter and two feet deep, at the bottom of which issues a stream of gas, which in volume and force is about equal to the blast forced from a common smith's bellows; but there is no cessation of its force, which is such as to create a violent ebullition in the water. Being heavier than common atmospheric air, the gas on passing up through the water constantly occupies the surface which is still the lower part of an indenture in the earth at that place. On presenting a taper, this gas instantly takes fire, and burns with great brilliancy. There is no absorption of it by the water, which possesses the purity of common spring water, neither is any offensive odour thrown off. This spring has been known to dry up entirely in the summer, when the air rushes out with increased force, accompanied by a hissing noise. There is nothing like smoke emitted."—*Schoolcroft, Lead Mines of Missouri.* p. 216.

Chemistry applied to industrious Economy.—A new method of killing animals, without causing them pain, has been adopted in London: they are made to expire by means of nitrogen gas. By this means the meat is rendered much more fresh, of a more agreeable taste, and may be preserved for a greater length of time.

A great number of the butchers of London already employed this process.—*Révue Encyclopédique*, tom. v. p. 185.

On the cold which occurs at Sun-rise.

[From the Journal of Science and the Arts.]

Oxford 10 *April*, 1820.

Sir—I observe in your last number, an allusion to the cold usually experienced in *India*, about the time of sun-rise. As this phenomenon, or something very nearly resembling it, takes place in this country also, and, as far as I have been able to ascertain, in all others, it has often been a matter of surprise to me that its causes should have been little, if at all, investigated. The Meteorological Diary which appears in your Journal, and all that I have ever seen, state the height of the thermometer at a certain fixed *hour*, without any regard to the situation of the sun: now it appears to me that an accurate account of the thermometer at a certain *period of the day*, (viz. the morning dawn,) and a comparison of its indications then and at noon, or some fixed hour, or at one hour before and one after, would tend to throw some light on the causes of the phenomenon in question. It is one to which I have paid considerable attention for a good many years, and have never been able to obtain a satisfactory solution. It is very striking, and has been noticed by many; but their observation of it being in general very limited, they, for the most part give an incorrect, because a partial, description of it; *e. g.* some speak of a certain fixed hour as the coldest in the twenty-four: that is true during, perhaps, about one month in the year, and no longer, *viz.* when that hour happens to coincide with the *day-break:* the case is much the same with those who fix upon half an hour before sun-rise; which may or may not coincide with the point in question.

The phenomenon, according to the best observations I have been able to make, and which I think will be confirmed by the regular inspection of a thermometer, is this: at the first dawning of morning twilight; or within twenty minutes at the utmost, of that point, a *sudden* diminution of temperature takes place, by no means necessarily preceded by any gradual diminution: the degree of this is very various, but frequently so considerable as to make the difference between what would generally be called very mild weather, and a pretty sharp frost. I think I have on some occasions experienced in little more than twenty minutes, a change which could hardly be less than 20°. The hoar-frosts of spring and autumn generally come on at that time, and sometimes so suddenly as to surprise the earth-worms, (which come out only in very mild nights,) and freeze them in great numbers. The cold will frequently continue, for an hour or two after the sun is up, to be greater than it had been in the night. In the remarkably hot summer of 1818, all the dew that fell was at that time the grass being at midnight as dry as at noon.

I shall be happy if these few hints have the effect of turning the attention of the lovers of meteorology to an interesting subject which has not hitherto been sufficiently investigated.

OXON.

The following observations, selected from an account given by Dr. Hamel, physician to the Emperor of Russia, of his descent in the sea in a diving-bell, seem to be worthy of the attention of the medical practitioner. When he had arrived at about four or five feet below the surface of the water, he began to feel pain in his ears, which became more and more severe as he descended. He began to fear that it would become quite intolerable, and made some efforts to introduce air into the Eustachian tubes, to counterbalance the inordinate pressure of that externally against the membrane of the tympanum. It was a long time before he could succeed in this, and then only with the right ear: on the air suddenly entering in this, the pain instantly ceased; but it became more and more distressing in the other ear. When he was at the depth of fifteen or sixteen feet, it seemed as if a stick were forcibly thrust into this ear. At length he made the air pass also on this side, which it did with a remarkable explosion, and the pain suddenly ceased. Not the least inconvenience was felt in respiration, even at a much greater depth; though the pressure of the atmosphere must have very considerably increased. On rising, he experienced again pain in his ears, resulting from the dilatation of the air in their interior cavities; but its escape was much easier than its entry. He felt, at about each foot of distance, as it were a bubble of air escape from the ear into the mouth, and each time this took place the uneasiness lessened. As the orifice of the Eustachian tube is closed in the manner of a flattened tunnel towards the mouth, which acts like a valve, it is very difficult to make the air pass from the ear into the mouth under the ordinary atmospherical pressure; but, in the diving-bell under water, the action of deglutition alone is sufficient: it seems as if the muscles of the cheeks during this action opened the orifice of the tube, and that the condensed air then forced the passage. In making this experiment, it is necessary to close the nostrils, and to make then a strong suction with the mouth closed; the air then comes from the internal cavity of the ear into the mouth, and a slight degree of pain is felt; which ceases on swallowing the saliva; because the air then re-enters the Eustachian tube, and the equilibrium is again established. From these circumstances, Dr. Hamel thinks that the diving-bell might prove a remedy in cases of deafness from obstruction of the Eustachian tube. In the conversation he had with the workmen who ordinarily went down in it, he found that they experienced similar sensations in their ears; and one of them said that, when the pain had become very violent, he sometimes heard a noise like the sound of a pistol-shot, and then it instantly ceased.

Lady Hardy, and some other persons, who went down in the bell at Plymouth, stated that they experienced similar phenomena.—*Lond. Med. & Physical Journal for September*, 1820.

Dr. Perret has communicated to the Physical Society of Carcassonne, a series of observations in proof of the efficacy of the plantain-root in intermittent fevers. It has long been employed in such cases by the German physicians. As it is an indigenous plant in England, it is extremely desirable that it should be ascertained whether or not the virtues imputed to it are well-founded; especially since Humboldt found, in his last voyage in America, that the cinchona lancifoliata was becoming exhausted in the forests about Peru.—(*Ibid.*)

Antidote for Vegetable Poisons.

M. Drapiez has ascertained, by numerous experiments, that the fruit of the *fewillea cordifolia* is a powerful antidote against vegetable poisons. This opinion has been long maintained by naturalists, but I am not aware that it has ever before been verified by experiments made on purpose in any part of Europe. M. Drapiez poisoned dogs with the rhus toxicodendron, hemlock, and nux vomica. All those that were left to the effects of the poison, died; but those to whom the fruit of the fewillea cordifolia was administered, recovered completely, after a short illness. To see whether this antidote would act in the same way, when applied externally to wounds into which vegetable poisons had been introduced, he took two arrows which had been dipped in the juice of manchenille, and slightly wounded with them two young cats. To one of these he applied a poultice, composed of the fruit of the fewillea cordifolia, while the other was left without any application. The former suffered no other inconvenience except from the wound, which speedily healed; while the other in a short time fell into convulsions and died.

It would appear from these experiments, that the opinion entertained of the virtues of this fruit in the countries where it is produced, is well founded. It would deserve in consequence to be introduced into our Pharmacopœias as an important medicine; but it is necessary to know that it loses its virtues, if kept longer than two years after it has been gathered.—(*Ibid.*)

A very interesting case of laceration of the subclavian artery by a shot, in which the hemorrhage was permanently restrained by compression, has been published by Dr. Bedeschi (in the *Annali Universali di Medicina*, Feb. 1820.) A man, twenty-seven years of age, received a shot on the middle of the right scapula, which traversed the chest so as to fracture the clavicle in the middle and lacerate the subclavian artery and vein, and the adjacent nerves; judging by the direction of the wound, and by the great loss of arterial blood which the patient had experienced. The right arm was cold, and devoid of sense and the power of motion. A compress was applied over the artery as it passes from between the scaleni muscles, and graduated compresses and a bandage applied over this. Warm fomentations were applied to the arm. Although three days elapsed without any serious consequences, some medical men advised the amputation of the arm, or the application of a ligature to the subclavian artery, to prevent more certainly a destructive hemorrhage on the separation of the eschar. But Dr. Bedeschi declined resorting to these measures, relying, 1st. on the suspension of the hemorrhage by the eschar, and the clot of coagulable lymph in the vessel; 2d. on the sufficient means presented for the compression of the artery at its passage from the scaleni on the first rib by the sternal portion of the clavicle; which the fracture had rendered moveable; 3d. because this difficult and uncertain operation might be retarded; and, lastly, because fatal hemorrhages have not often been consequent on gun-shot wounds, and many severe wounds of arteries have been cured by compression. No hemorrhage troubled the course of the cure; a little emaciation of the arm, and impossibility of moving it, were the only evil consequences. The pulsation of the subclavian artery was afterwards found to be very strong for half an inch beyond the scaleni, but could hardly be felt in the axilla: it began to be perceptible again about the middle of the arm, and was very strong at the wrist, though the artery was a little contracted. Moderate exercise of the limb, and some other ordinary measures, restored its strength; so that the patient had recovered the use of it after the lapse of twenty-eight months from the accident.—(*Ibid.*)

METEOROLOGICAL OBSERVATIONS.

State of the Weather at Philadelphia, during the last six months of 1820.

JULY.

Thermometer—Lowest at 8 A. M. 72, 24th day of the month.
Highest at 3 P. M. 93, 1st day.
Mean - - 81.

Winds chiefly southerly—weather generally clear with occasional heavy showers—several cases of malignant fever towards the close of the month in the neighbourhood of Race street wharf—some fatal cases of scarlatina—Bilious remittent continues amongst the Blacks with unabated violence.

AUGUST.

Thermometer—Lowest at 8 A. M. 69, 28th day of the month.
Highest at 3 P. M. 93½, 12th day.
Mean - - 77½.

Winds, Southerly and Easterly—heavy showers, with intermediate clear and hot weather—Crops of winter grain good—Peaches, apples, and melons abundant and good—Cholera Infantum prevalent—Malignant fever subsided in the neighbourhood of Race street wharf, and reappeared towards the latter end of the month near Walnut street wharf—is unusually fatal.

SEPTEMBER.

Thermometer—Lowest at 8 A. M. 50, 21st day of the month.
Highest at 3 P. M. 84, 1st day.
Mean - - 68½.

S. Westerly and N. Easterly winds prevail, with clear warm weather—Malignant fever continues, yet very few cases have occurred which could not be satisfactorily traced to the small infected districts—It is epidemic and unusually mortal in Savannah, New Orleans, Charleston and the Havanna. Bilious remittent amongst the Blacks nearly subsided.

OCTOBER.

Thermometer—Lowest at 8 A. M. 38, 30th day of the month.
Highest at 3 P. M. 73, 2nd day.
Mean - - 55.

Winds Northerly—frequent heavy rains—Malignant fever subsided as the weather became cold—Scarlatina continues—in general mild.

NOVEMBER.

Thermometer—Lowest at 8 A. M. 27, 14th day of the month.
Highest at 3 P. M. 58, 1st day.
Mean - - 43.

Winds Northerly and Westerly—light snow on the 11th.

DECEMBER.

Thermometer—Lowest at 8 A. M. 20, 1st day of the month.
Highest at 3 P. M. 44, 6th and 8th day.
Mean - - 33.

Winds Westerly—Weather variable—Many severe and some fatal cases of Scarlatina, although the disease is not very prevalent.

RAIN GUAGE.

Account of the quantity of Rain and Snow that fell in Germantown, in 1820.

	RAIN.	SNOW.
January, - - - -	2 5	12 0
February, - - - -	3 2	12 0
March, - - - -	5 5	1 0
April, - - - -	0 80	6 0
May, - - - -	6 94	
June, - - - -	2 15	
July, - - - -	5 20	
August, - - - -	2 60	
September, - - -	1 92	
October, - - - -	8 89	
November, - - -	2 90	4 0
December, - - - -	3 8	5 0
Inches, - - - -	44 60	Inches, 40 0

[*Am. Da. Adver.*

DISPENSARIES.

It appears, from the statements published, that there have been attended, by the Dispensary physicians, since last year, four thousand six hundred and seventeen patients.—

Philadelphia Dispensary—

From December 1st. 1819, to December 1st. 1820— -		3,223
Of these the number cured is - - -	2897	
Relieved - - - - -	67	
Dead - - - - -	66	
Irregular or uncertain - - -	90	
Removed - - - - -	33	
Remaining under care - - -	70	
		3,223

Southern Dispensary.

From December 1st. 1819, to December 1st. 1820.—		1,394
Of these the number cured is	1,217	
Relieved	66	
Dead	45	
Irregular or uncertain	17	
Removed	23	
Remaining under care	26	
		1,394

Northern Dispensary.

No publication yet made by them.

VACCINATION.

The City Clerk reports, that during the year 1820, thirteen hundred and fifty-one persons, have been successfully vaccinated, in the City of Philadelphia, by the physician appointed by the Select and Common Councils.

By the report of the Board of Commissioners of Southwark, it appears that their physician has successfully vaccinated eight hundred and forty one persons, from April 3, 1820, to January 8, 1821.

The Board of Commissioners of the Northern Liberties have not yet published the numbers vaccinated by their Physician.

AMERICAN PHILOSOPHICAL SOCIETY.

At an Election held this day, at the Hall of the American Philosophical Society, the following persons were elected officers:—

President—Robert Patterson.

Vice President—William Tilghman, Peter S. Duponceau, Zaccheus Collins.

Secretaries—Robert M. Patterson, Thomas T. Hewson, Robert Walsh, George Ord.

Counsellors.

For one year—Wm. Rawle, Horace Binney, John Sergeant, John Quincy Adams.

For two years—James Gibson, Nathaniel Chapman, Robert Hare, Wm. Hembel, jr.

For three years—Thomas Jefferson, William M'Clure, William Meredith, Nicholas Collin,

Curators—Joseph Cloud, Thomas Say, William E. Horner.

Treasurer—John Vaughan.

Philadelphia, Jan. 5, 1821

NEW ACADEMY OF MEDICINE.

President—Nathaniel Chapman, M. D.
Vice President—Samuel Jackson, M. D, William P. Dewees, M. D.
Secretary—John Barnes, M. D.
Treasurer—Thomas Harris, M. D.

PHILADELPHIA DISPENSARY.

January, 1, 1821.

The annual meeting of the Contributors was held this day, when the following persons were duly elected Managers for the present year :

William White, Robert Blackwell, Henry Helmuth, Lawrence Seckel, Robert Smith, Godfrey Haga, Elliston Perot, Joseph Crukshank, Roberts Vaux, Joseph Parrish, Hartman Kuhn, Samuel P. Griffitts.

At a meeting of the Managers, January 3d. the following named officers of the Institution, were appointed :

Attending Phisicians and Surgeons—Drs. Joseph G. Nancrede, George B. Wood, Richard Harlan, William Price, Goveyneer Emerson, Hugh L. Hodge.

Consulting Physicians and Surgeons.—Drs. Thomas Parke, Philip S. Physick, Thomas C. James, Thomas T. Hewson.

Treasurer—Joseph M. Paul.

Apothecary—George G. Tresse.

NATIONAL PHARMACOPŒIA.

This long desired work is now printing at Boston, under the care of a committee of the General Convention.

List of Late American Republications.

Thomas Dobson and Son, have commenced the publication of the Modern Medical Classics ; selected and revised by Drs. Physick and Chapman.—The first work of the series is Johnson's celebrated work on the Diseases of Tropical and Tropicoid Climates—which is just finished in two volumes, 12mo. price in boards, $2 or neatly bound, $2 50, each of the works composing the series, will be for sale separate.

Parson's Sailor's Physician, bds. 8vo. $1 75.

Frost on the Yellow Fever of Havanna, stitched, 8vo. 50.

New York Hospital Reports, pt. 2. bd. 8vo. 1 50.

Facts and Observations on Liver Complaints, and Bilious Disorders in General—By John Faithhorn, M. D. 8vo. 1 dollar 50 cents.

Baillies' Morbid Anatomy, 8vo. $ 2 50.

London Dissector—First American from the fifth London Edition.

Willich's Domestic Encyclopœdia, improved. By Thomas Cooper, M. D. 3 vols. 8vo. $10 50, in boards. $ 12 00 bound.

Proposed American Republications.

Armstrong on Scarlatina, &c. &c. to match Johnson on Tropical Diseases, in 12mo. By Thomas Dobson and Son.

Saunders on the Eye, with Coloured Plates.

Saunders on the Ear, with coloured Plates.

Brodie on Diseases of the Joints, Coloured Plates. By Benj. Warner.

List of recent European Publications.

Medicine, Anatomy, and Surgery.

Medical Transactions, published by the College of Physicians in London, with coloured plates, Vol. viii. 12*s.* boards.

A Treatise on the Inflammation of the Mucous Membrane of the Lungs. By Charles Hastings, 8 vo. 10*s* 6*d.*

An Address to persons afflicted with Deafness. By W. Wright. 4*s.*

A Synopsis of the various kinds of difficult Parturition, with Practical Remarks on the management of Labours. By S. Merriman. 12s. boards.

Cases of a Serous Morbic Affection, chiefly occurring after delivery, miscarriage, &c. from various causes of irritation and exhaustion, and a similar affection, unconnected with the puerperal state. By Marshall Hall, M. D. F. R. S. E. 8 vo. 4*s.*

Medical Jurisprudence, a Dissertation on Infanticide, in its relations to Physiology and Jurisprudence. By William Hutchinson, M. D. F. L. S 8 vo 5*s* 6*d.*

A Toxicological Chart, in which are exhibited at one view, the symptoms, treatment, and modes of detecting the various poisons. By a member of the Royal College of Surgeons in London. 2*s.* 6*d.*

Cases, illustrative of the efficacy of the Hydrocyanic or Prussic Acid, on affections of the Stomach, &c. By John Elliotson, M. D 8 vo 5*s.* 6*d*

An Inquiry illustrating the nature of Tuberculated Accretions of Serous Membranes, and of the origin of Tubercles and Tumours, in different textures of the body. By John Baron, M. D 8 vo plates, 14*s.*

Chaussier, Recueil Anatomique à l'usage des Jeunes Gens qui se destinent à lètude de la Chirurgie, de la medecine, de la Peinture, et de la sculpture ; avec les explications suivant la nouvelle nomenclature méthodique et des tables synonymiques, avec 17 planches et le portrait de l'auteur, 4 to.

Delarue, Cours complet des Maladies des yeux, suivi d'un traité abrégé d'Hygiène oculaire, comme faisant partie intégrante de ce cours, 8 vo.

Dictionnaire des Sciences Médicales, Vol xlv. et xlvi. (POURRACH.) 8 vo

Journal complémentaire du Dictionnaire des Sciences Médicales, Livraison, xxv. 8 vo.

Bourdon, Recherches sur le mécanisme de la Réspiration et sur la circulation du sang. 8 vo.

Georget de la Folie, Considération sur cette Maladie ; son siège et ses symptomes ; la nature et le mode d'action de ses causes ; sa marche et ses terminaisons, &c. 8 vo.

Reydellet, du Suicide considéré dans ses rapports, avec la morale publique, et les progrès de la liberté dans les pays anciens et modernes, mais surtout en France, 8 vo.

Trolliet Nouveau Traité de la Rage. Observations cliniques, recherches d'anatomie pathologique, et doctrine de cette maladie, 8 vo.

Delabarre, Traité de la partie mécanique de l'Art du Chirurgien Dentiste ; ouvrage orné de 42 planches, 2 vols. 8 vo.

Natural History.

The Natural Histroy of British Quadrupeds, with figures. By E. Donovan, F. L. S. A. 9*s*.

The Natural History of Ants. By P. Huber. Translated from the French, with notes By J. R. Johnson, M. D. 12mo. 9*s*.

A compendium of the Ornithology of Great Britain, with a reference to the Anatomy and Physiology of Birds By John Atkinson, 8*s*.

D' Audebard de Férussac, Histoire Naturelle des Mollusques, livraison, viii. 4to. et fol.

Dictionnaire des Sciences Naturelles, tom. xvii. (EYS-FIL,) 8vo.

Botany.

Hortus Suburbanus Londinensis; or, a Catalogue of Plants, cultivated in the neighbourhood of London. By R. Sweet, F. L. S 8vo. 18*s*.

Humboldt, Voyage Partie Botanique ; Mimoses et autres plantes légumineuses du Nouveau Continent. v me livraison, folio, avec fig. col. 3*l*. 3*s*.

Flore du Dictionnaire des Sciences Médicales, Nos. 102 et 105, 8vo.

Rural Economy.

Transactions of the Horticultural Society of London, Vol iv. Part. 21*l*. 13*s*.

A new system of Agriculture, without lime or dung ; or Summer fallows By Major Gen. Beatson, 8vo. 9*s*.

Rules for Repairing Roads, drawn up from the evidence of Mr. Telford and Mr. Mc'Adam, 8 vo. 2*s*.

Arts and Sciences.

Cyclopædia or Dictionary of Arts and Sciences. Edited by Abraham Rees, D. D F. R. S. 4 to vol. xxxix. Part. iii. and final, 1*l*. 1*s*

An Analysis of the true Principles of Security against forgery By Sir William Congreve, Bart. 8 vo 1*l* 1s.

Voyages and Travels.

The Emigrant's Guide to Upper Canada. By Capt Charles Stewart 12 mo. 7*s*

Facts and Observations respecting Canada, and the United States of America. By C F. Grece, Esq 8 vo 6*s*.

A Geographical view of Upper Canada, with remarks on the situation of the Inhabitants, &c. and a complete description of Niagara Falls, &c By M Smith, 3*s* 6*d*

Sketches of Lower Canada, Historical and Descriptive, with an account of the soil and aspect, the morals, habits, and religious institutions of that Country. By J. Sansom, member of the American Philosophical Society, 6*s*.

Humboldt, Voyage aux Régions Equinoxiales du Nouveau continent, fait en 1799, 1800, 1801, 1802, 1803, et 1804, tom. v. et vi. 8 vo.

Died in Cambridge, Mass. on Monday evening the 1st. of Jan. 1821, William Gamage M. D. in the 76th year of his age. The circumstances attending his sudden decease, were as singular as they are affecting and admonitory. He had been absent from his own house but a few moments, in his usual state of perfect health, engaged in his professional duties ; when endeavouring to avoid danger from an approaching sleigh, he was unexpectedly encountered by another from the country, driven *without bells*, which, as he fell before it, passed directly over his body, and he survived the accident but about half an hour.

This venerable man had been an eminent and successful practitioner of medicine, for upwards of *half a century*, in the immediate vicinity of his native place; and is taken thus suddenly from the pursuits of his valuable labours.

University of Pennsylvania.

William Edmond Horner, M. D. was unanimously appointed Adjunct Professor of Anatomy, at a meeting of the Trustees, on the evening of the 5th instant.

THE

ECLECTIC REPERTORY

AND

ANALYTICAL REVIEW.

Vol. XI. APRIL, 1821. No. II.

SELECTED PAPERS.

Some Observations relating to the secreting Power of Animals, in a Letter addressed to the Editor of the Journal of the Royal Institution. By A. P. W. Philip, M D. F. R. S. E., &c.

[From the Journal of Science and the Arts, Vol. IX.]

Worcester, May 1, 1820.

Sir—As you did me the honor to publish in the fifteenth Number of the *Quarterly Journal*, a paper relating to the agency of galvanism in the animal economy, in which I stated the reasons which seem to prove the identity of this power and the nervous influence, I trouble you with the following observations, connected with the same subject, to which I shall be much obliged to you, if they appear to deserve it, to give a place in the next number of that Journal.

Of the circumstances which tend to establish the identity of the nervous influence and galvanism, the strongest appears to be, the due performance of secretion by means of the latter, after the nervous influence is to such a degree withdrawn from secreting surfaces, by dividing their nerves, that without this aid, they are no longer capable of their function. This argument, of course, wholly rests on the supposition, that when we divide the nerves, we destroy the power of a secreting surface; not by any injury done to it through the medium of its wounded nerves, but by preventing the supply of something on which its secreting power depends. The consideration of this question is the object of the following paper.

It is not my intention to trouble you with any speculative opinions on this subject, but simply to inquire what inference the facts we possess relating to it warrant. Having long been engaged in the practice of medicine, and considered it as the only object of my serious studies, I have been accustomed to measure the importance of all physiological questions by the degree in which they bear on the practical part of this profession, and consequently to attach but little value to any thing, which could not be brought to the test of experiment, and admit of useful application. During some investigations which have occupied the time I could spare, from the more active duties of my profession, and writings relating to its more immediate objects, I was struck with the wonderful power of galvanism, in repairing derangement of function in the animal body; and conceived, that if we could ascertain the principle on which it acts, it might be rendered an important agent in the cure of diseases. Its effects in restoring vigour to the lungs and digestive organs, under certain circumstances in the human body, of which an account is given in the *Philosophical Transactions* of 1817, and more fully in my *Inquiry into the Laws of the Vital Functions*, prove that this expectation has already been realized to such an extent, as to hold out a rational hope of further advantages, and consequently to make it worth while carefully to examine the grounds on which it is founded.

It will be necessary to premise a few observations on the relation which subsists between the nervous and muscular systems. Haller inferred from the fact, that after we have, as far as possible, deprived a muscle of nervous influence by dividing its nerves, it is still found capable of its function; that the muscular is independent of the nervous power. His opponents, however, have objected to this inference, because although in his experiment, the muscle is prevented from receiving more nervous influence, it is not deprived of that already bestowed on it, either forming a necessary part of the fibre itself, or dispersed throughout its substance in nerves too small to be removed by the knife; and this objection appears to be greatly strengthened by the circumstances, that after a muscle is separated from the body, its excitability is soon exhausted; and that those muscles, over which the will has no power, are notwithstanding supplied with nerves. It occurred to me, that this question could only be determined by some experiment, which should ascertain whether the permanence of the excitability of muscles is proportioned to the nervous influence they receive, or whether this influence tends, like other stimuli to exhaust it; for if it be proved that the permanency of the excitability is unimpaired by cutting off all fresh supply of nervous influence, and that the nervous influence exhausts this quality precisely as other stimuli do, a doubt, I conceive, cannot remain, respecting its dependance on the mechanism of the muscular fibre itself. The 32d experiment related in the above Inquiry, appears to answer these questions in the affirmative, and therefore to prove the independent power of that fibre.

I am here called upon to notice an opinion on this subject, which, I believe to be altogether new, advanced by Dr. Alison in an able and ingenious paper in the last number of the *Quarterly Journal*, entitled *Observations on the Theory which ascribes Secretion to the Agency of Nerves.* While he admits the foregoing conclusion respecting the muscles of voluntary motion, he conceives, that in the muscles of involuntary motion, the nervous influence produces an "alteration in the vital power or tendency to contraction." A few observations on this, and another opinion of Dr. Alison relating to the same part of the subject, namely, that the arguments I have used against the opinion of M. le Gallois, that the power of the heart depends on the spinal marrow, are equally strong against the dependance of the secreting power on the nervous influence, will prepare us for considering the question which forms the principal subject of this paper.

Dr. Alison, I have just had occasion to observe, admits it to be proved, with respect to the muscles of voluntary motion, that stimuli applied to the brain and spinal marrow excite them merely by calling into action a power which exists in the muscle itself; but as it is found also, that stimuli applied to the same organs produce the same effects in the muscles of involuntary motion, there is surely the strongest proof that analogy, a principle founded on the simplicity usually apparent in the works of nature, can afford, for believing the operation of the stimuli to be similar in both cases. If, however, Dr. Alison has direct evidence of his opinion, this analogy, however strong, must be disregarded. Let us inquire into the evidence he adduces.

The following paragraphs are the only passages in his paper in which he attempts to support his opinion. After some observations on the opinion of Haller, he observes, (page 108)—"The experiments of Dr. Philip have illustrated more fully than those of any other physiologist, these two different modes in which changes in the nervous system affect muscular action. The general result of his observations, and of those of Haller, Bichat, and others on this subject, may be stated to be, that the first mode of action, that is, the direct excitation of muscular fibres to contraction by impressions made on the nervous system, is confined to the voluntary muscles; and that the second mode of action, that is the alteration of the vital power or tendency to contraction of muscular fibres by impressions made on the nervous system, is chiefly exerted on the involuntary muscles."

In the foregoing observations, Dr. Alison refers to certain experiments of mine as the chief proof of his opinion. These experiments prove, that when any considerable part of the brain or spinal marrow is exposed to the action of a stimulus or sedative, the heart and blood-vessels are affected by it, in a way similar to that in which the muscles of voluntary motion are affected by the same substances applied to certain parts of the same organs. Now what relation these results have to the above opinion, I am unable to perceive. In the following paragraph indeed, Dr. Alison says, "although the term stimulus was very naturally applied by him to the substances, which quickened the action of the heart when applied to the brain or spinal marrow; yet various considerations might be stated to show, that the effect of these substances is more correctly expressed by saying, not that they excited contractions of the muscular fibres of the heart, but that they increased the tendency of the muscular fibres of the heart to contract from the stimulus of the blood." Dr. Alison, however, does not specify, nor can I at all conjecture what these considerations are; but he will admit that it is a consideration of weight respecting the statement he here makes, that the effect of the stimulus applied to the brain and spinal marrow on the heart, was precisely the same, whether the blood had been wholly evacuated or not. He is not himself an experimenter; and here, as in some other instances, experiences the disadvantage which often attends reasoning from the experiments of others. All the circumstances of an experiment are seldom related, the experimenter chiefly noting those which affect his own views on the subject, and thus others, who reason from them with other views, are often misled. To say that the nervous influence in one set of muscles, can increase and impair the excitability of the muscular fibre; and yet, that in another set this excitability depends wholly on the irritable nature of that fibre itself, either supposes that there are two kinds of muscular excitability, wholly differing in their nature, or implies a contradiction. The nervous influence, however independent the power of the muscular fibre, may call it into action, or it may so affect its organization as to impair its power; but how it can bestow a greater or less degree of what is derived from a different source, it would be difficult to understand, and Haller, in the passages quoted from his works by Dr. Alison, in the 108th page, has been justly regarded as forced into contradictions by the strength of his opponent's arguments, who called upon him to say, why the heart is supplied with nerves, if its excitability be wholly independent of the nervous system. Thus it appears, that Dr. Alison has not only adduced no proof of the opinion above stated, but that unless we admit of two kinds of muscular excitability, for which I believe nobody will contend, it is incompatible with opinions, the truth of which he admits.

With regard to the other opinion of Dr. Alison, relating to this part of the subject,—he observes in the 112th page, " We are not more entitled to conclude that the secretions of the stomach depend on its nerves, from finding them stopped by the division of these nerves, than Le Gallois was to conclude that the action of the heart depends on the spinal marrow, from finding it stopped in his experiments by crushing that organ." Let us consider how far the cases are parallel. I say, that when M. Le Gallois destroyed the power of the heart, by crushing the spinal marrow, he was not at liberty to ascribe this effect to that power depending on the nervous system, because although it were independent of this system it might still be influenced through it. It was therefore necessary to observe the effects of other modes of withdrawing the nervous influence from the heart. My argument turns on the circumstance, that although the power of the heart may be destroyed by crushing the spinal marrow, it is not at all impaired by dividing the nerves which convey its influence. If it were equally destroyed by both, M. Le Gallois' inference I conceive, would be unavoidable. Now this is the case with the secreting power: it is equally destroyed by both; and unless Dr. Alison can point out some way of withdrawing the nervous influence from secreting surfaces without destroying their power, as has been done with respect to the heart, he cannot surely regard the two cases as at all parallel.

To the question whether the power of secretion depends on the nervous influence, we are now prepared to give, what appears to me a ready answer. The fact just stated, I conceive, affords this answer. We have no means of withdrawing the nervous influence from secreting surfaces without destroying their power. All will admit, that the only idea we attach to cause and effect is, that of two events, one of which constantly follows the other. It is therefore incumbent on those who deny that the nervous influence is essential to secretion, to show why the usual mode of reasoning is not to be considered conclusive in this as in other cases.

But conclusive as this mode of reasoning is, it is not the only way of answering the question before us. When the nerves of a secreting surface are divided, it loses its power, either in consequence of its nervous influence being impaired, or from the immediate effects of the injury occasioned by their division. We have direct evidence against the latter opinion. If the injury, done to the nerves, were the cause of the derangement, the more the nerves are injured in the act of dividing them, the more as happens with respect to the power of the heart, when it suffers from injury of the brain and spinal marrow, the secreting power would be deranged; but we find its derangement bearing no proportion to the injury done to the nerves, but always proportioned to the degree in which the supply of nervous influence is impaired.

Besides if the division of the nerves produces its effect by injuring the secreting organs, although the nervous influence were again restored to them, they should still be found incapable of their function. But it has been ascertained by the experiments of Dr. Haighton, related in the *Philosophical Transactions* of 1795, that, if the secreting surface is not so far deranged by the division of the nerves as to prove fatal, as soon as the parts of the nerves are sufficiently reunited, again to convey the nervous influence, the secreting power again becomes perfect. Will it be alleged, that as the division of the nerves injures the secreting organ, their re-union repairs the injury? or that by some strange coincidence the injury done to the secreting surface in such cases requires exactly the same time for its repair, which is required for the re-union of the nerve, although the two events are no ways connected?

The question before us is, when the function of a secreting surface is deranged by dividing its nerves, is this to be ascribed to its being deprived of its nervous influence, or to its being injured by the act of dividing its nerves? We know that it arises from the former, because when it is deprived of its nervous influence by any other means the effect is the same; because the effect is not at all proportioned to the degree of injury done to the nerves, but to the degree in which the nervous influence is withdrawn; and because as soon as the nervous influence is restored, it is again capable of its function.

I may here observe that in one essential respect Dr. Alison in a paper above referred to, misconceives the result of my experiments. I never found the secretions suppressed, as Dr. Alison supposes, by dividing the nerves; so far from it that it is observed in the 124th page of the second edition of the "*Inquiry*," &c.; "It deserves notice that although the eighth pair of nerves have been divided, the food is found covered with apparently the same semifluid which we find covering the food in a healthy stomach," and it is constantly stated, that the lungs after the division of the nerves were clogged with frothy mucus. It is true that after the division of the nerves, Mr. Brodie* did not find that arsenic produced the copious secretion observed from it in the entire animal. But it is to be recollected, that he speaks of a morbid secretion produced by the irritation of the poison, and which of course would have no existence if the irritation which occasioned it were prevented, a probable means of doing which was dividing the nerves of the affected organs. It is also true that Mr. Brodie found in the newly dead animal, that, although the circulation was supported by artificial respiration, there was no secretion of urine. But this result, I believe, was by no means the consequence of the loss of nervous power, but of the diminished *vis a tergo*. From every thing I have observed of the newly dead animal, it would appear that we cannot, by artificial respiration, which cannot be made to resemble the natural function, give such vigour to the circulation, as at all approaches to that in the living animal; and the secretion of urine which takes place after death, must be inconsiderable under any circumstances. Besides the division of the spinal marrow in the upper part of the neck, in Mr. Brodie's experiment, as it did not tend to lessen the supply of nervous influence to the ganglian system, could have no effect in diminishing the little nervous influence which still continues, (as appears from the experiments in which I divided the eighth pair of nerves immediately after death,) to be sent to secreting surfaces in the newly dead animal. I can truly say, that in the living animal I never found the secreted fluids suppressed by dividing the nerves. The remaining nervous influence seemed always sufficient to occasion a separation of fluids from the blood as long as it was supplied. It is to be recollected, that neither the stomach nor lungs are wholly deprived of nervous influence by dividing the eighth pair of nerves. Such is the connexion of the ganglian nerves, that it is impossible during life wholly to deprive any secreting organ of nervous influence. The object of my experiments was not to show, that when a secreting surface is deprived of the whole of its nervous influence, secretion is prevented; but, that when any considerable part of it is withdrawn, the properties of the secreting fluid are so altered, that it is no longer fitted for its purposes in the animal economy.

Although I consider what is said above as decisive of the question before us, were it not for too much extending the limits of this paper, I should be happy to make a few observations on several interesting questions relating to it, on which Dr. Alison touches,

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* Philosophical Transactions for 1814.

On one of these as being extremely curious, I shall beg leave to detain you a few moments. In the 122d page, Dr. Alison observes, "In the child of whom we have an account by Mr. Lawrence, in his paper in the *Medico-Chirurgical Transactions*, Vol. V. page 165, there was neither brain nor cerebellum. This child lived four days, and the secretions from its stomach, bowels, and kidneys, seem to have been quite natural. Surely this is sufficient to show that the division of the eighth pair of nerves and of the spinal marrow in the neck, which stopped the secretions of gastric juice and of urine in those experiments, could not have acted by cutting off an influence essential to secretion, coming from the brain." The observation of Mr. Lawrence, that there existed over the foramen magnum "a soft tumour about equal in size to the end of the thumb," a circumstance of considerable moment in the case, is overlooked in this account. In reasoning on it, Dr. Alison forgets that if it proves any thing it proves too much. The child of course respired. To respiration the sensorial power is necessary.

In the 24th volume of the *Edinburgh Review*, the reader will find the best account of well authenticated cases analogous to the case of Mr. Lawrence, perhaps any where to be met with. In some of these not only the respiration but the more evident sensorial functions existed. In one related by Dr Heysham of Carlisle, there was nothing in place of brain but a brown vascular mass. "There was not the least appearance of a cerebrum, cerebellum, or any medullary substance whatever; yet this child was full grown, well-proportioned, and seemed in perfect health. It moved its limbs with agility, swallowed well, and took a sufficient quantity of nourishment. All the external organs of sense were perfect. The eyes were as full and lively as in any other child of the same age. The iris evidently contracted on the application of light, and from some other observations which Dr. Heysham then made, he had no doubt that vision was perfect." (Page 447.) A similar case is given on the authority of Sir Everard Home, where the only appearance of brain was a little medullary pulp behind the orbits. Are we to conclude from such cases, that the sensorial power has no dependance on the brain?

The following are the only facts with which I am acquainted, that tend to throw light on this very obscure subject. In other instances we see the functions of vital organs going on, when, as far as we can judge by inspecting the organs, the structure on which these functions depend is wholly lost. Those who are in the habit of seeing the dissection of phthisical subjects, know how strikingly this observation is sometimes illustrated by the state of the lungs. The brain, it appears from many observations, admits under certain circumstances of a great degree of distension and compression, without its functions being materially deranged. If we suppose that it possesses these properties to such a degree as occasionally to admit of being thinned to a membrane, or contracted to a small nob, without its functions being deranged, the above cases may be explained. It also deserves particular attention in considering such cases, that it appears from the experiments of M. Le Gallois, in which, beginning from the upper part, he gradually sliced off the brain and cerebellum, that the functions of the eighth pair of nerves, on which both the sensorial power employed in respiration, and the power of secretion in the viscera, as far as the brain is concerned, chiefly depend, continued after the whole of both organs had been removed, except the parts in the immediate neighbourhood of the origin of these nerves, parts hardly admitted to belong to the brain. But in the present state of our knowledge, it would be profitless to pursue this subject farther. It is enough to remind the reader that Dr. Alison's mode of reasoning from it is inadmissible. With respect to the fact that considerable parts of the brain have been suddenly lost without materially affecting secretion, the same answer applies, neither do such losses of brain in general materially affect the sensorial power. Were we to attempt to explain this, we might say, in conformity with the opinion of some writers, that it arises from the same cause that the loss of an eye or ear does not materially affect the sight or hearing, nor the loss of a kidney the secretion of urine.

Much as Dr. Alison and I differ in many respects, I cannot conclude without calling your attention to what appears to me, the very correct view taken by him of the question respecting the identity of the nervous influence and galvanism. Those who have hitherto objected to my conclusion from the experiments in question,* either maintain, that we must rather suppose the existence of a power capable of the most complicated functions of the nervous influence, yet distinct from it, than admit the identity of these powers; and that, without attempting to show that in any of their properties they are incompatible with each other; an instance of more erroneous reasoning than which it would, as far as I am capable of judging, be impossible to adduce; or that galvanism excites the nerves of the part to prepare nervous influence, and thus perform the office of the brain or spinal marrow, of which every fact relating to their functions proves them incapable. We might as well, I conceive, suppose a bone, as a nerve capable of preparing this influence. They are mere channels through which it passes, and when the little they retain after their separation from the brain and spinal marrow is exhausted, they have no capability of forming more. Dr. Alison, far from adopting either of these opinions, declares without hesitation, that the only way of refuting my inference is to prove that the nervous influence is not essential to secretion. "Here we have," he observes, "the nervous influence cut off, and yet secretion going on. On the supposition that the nervous influence is really essential to secretion, this can only be explained by supposing the galvanic influence which is substituted for it to be really the same thing. If, therefore, we can make it probable that the changes which occur in the nervous system are not galvanic actions, we need go no farther after these experiments in order to show that the nervous system is not necessary to secretion;" and in page 119, "if

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* I have much pleasure in referring to a paper in the last number of the *London Medical and Physical Journal*, by Clarke Abel, M. D. F. R. S. Physician at Brighton, in which he gives an account of very careful and well conducted repetitions of my galvanic experiments on the lungs and stomach, made in the presence of several medical gentlemen. In one of these repetitions he employed a comparatively weak, and in the other a considerable power, of galvanism. In the former, although the galvanism was not of sufficient power to occasion evident digestion of the food, the constant effects of dividing the eighth pair of nerves, the efforts to vomit, and the difficulty of breathing, were prevented by it. These symptoms occurring when it was discontinued, and disappearing on its re-application. "The respiration of the ani-

mal," he observes, "continued quite free during the experiment, except when the disengagement of the nerves from the tin foil rendered a short suspension of the galvanism necessary during their re-adjustment." "The non-galvanized rabbit breathed with difficulty, wheezed audibly, and made frequent attempts to vomit." In the latter experiment in which the greater power of galvanism was employed, digestion went on as in my experiments. The galvanism proved fatal in nine hours. He remarks the greater moisture of the cardiac portion of the food, which is peculiarly characteristic of the healthy state of the stomach in the rabbit.—See the first section of Chapter seven, part second, of my *Inquiry*. "The pyloric part of the mass," he observes, "was of a brownish colour and resembled the contents of a healthy rabbit's stomach, except towards the centre, where it had a greenish maculated appearance, seemingly from the mixture of parsley in different states of digestion, while the stomach of the non-galvanized rabbit contained only a continuous mass of masticated parsley." He closes his account of this experiment with the following observations: "From this experiment it seems legitimate to infer, that galvanism of a certain power passed in a continued stream through the thoracic and gastric portions of the eighth pair of nerves, after their division, will produce the phenomena of digestion. It entirely corresponds, both in its details and results, with the experiments of Dr. Wilson Philip."

they," that is the changes in the nervous system, "be not galvanic, Dr Wilson Philip's experiment, above referred to, becomes an *experimentum crucis* against their being essential to secretion."

According to this view of the subject, which has always appeared to me the only correct one, when we prove that after deranging the functions of a secreting surface by dividing its nerves, we can restore its healthy state by galvanism, we prove the identity of this power with that on which secretion depends; and that secretion depends on the nervous power, the facts just laid before the reader, as far as I am able to judge, appear sufficiently to evince.

The experiment alluded to in the above passages quoted from Dr. Alison's paper, even by his admission, being an *experimentum crucis* of the identity of galvanism and the secreting power, must, except on the supposition that secretion does not depend on the nervous influence, do away all that he says respecting our not being able to point out how galvanism is excited, or how it effects so great a variety of changes in the animal body. We must of course admit that our knowledge of this principle is very limited;* but we see nothing in the phenomena of the nervous influence, on the supposition that it is galvanism, more extraordinary than many analogous facts. How is electricity collected and subjected to the will of electric animals, so that they cannot only evolve it at pleasure, but according to M. Humboldt's experiments, direct it to any particular part of the body? How does it happen, that the electricity of the gymnotus, which is strong enough to deprive a horse of power, cannot affect the nicest electrometer? Can any one who has read the experiments of Sir James Hall on the various results obtained under different circumstances by the agency of caloric, even on the same substances, and those few in number, be surprised, that a variety of products should be the results of the agency of galvanism, in the animal body, of which the component parts are so numerous and so differently circumstanced?

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* When Dr. Alison, towards the end of his paper, accuses me of supporting one hypothesis by another, he forgets that what I say on the subject under discussion is thrown out as a mere suggestion, namely, that on the supposition of the nervous influence being galvanism the difficulties stated are explicable: on the supposition of its being something no-where existing, but when formed by the brain and spinal marrow, they are wholly inexplicable; referring, however, to future investigations for any knowledge that may be acquired on the subject. I allude chiefly to the phenomena of the fœtus previous to the formation of any part of the brain and spinal marrow.

Case of Contracted Rectum. Communicated, by letter, to HENRY DAVIES, Lecturer on Midwifery, Conduit Street. *With Remarks* by Mr. DAVIES.

[From the London Medical Repository, for Nov. 1820.]

The following case of simple contraction of the rectum, which I now submit to your inspection, (and which you are at liberty to make what use you may think proper of,) was accompanied throughout by the most deplorable sufferings; such as I am persuaded few professional men, if any, would be inclined (*a priori*) to attribute to such a disease. I shall either intersperse a few remarks as I proceed, or keep them in reserve for a second communication. Being in the public service, (the army,) I was, in May, 1812, ordered, with my regiment, to embark for the West Indies, at which station we arrived, and formed part of the garrison of Barbadoes till January, 1813; during which time I was in perfect health, never having been confined a day. At the latter period I was ordered to join another regiment, at St. Croix, one of the most beautiful of the Leeward Islands, indeed so much so, as to be called the garden of these islands. About three weeks after my arrival at this latter station, I was overtaken, rather late in the evening, by one of those peculiarly heavy showers of rain; and neglecting, on my gaining home, the necessary precautions in these climates, I was confined by an indisposition of some days to my quarters. During my convalescence, and before I was enabled to resume my professional duties, I went to inspect the bodies of two men who had died from the yellow fever. Having finished my inspection of the one, I made the necessary incision through the abdominal parietes of the other, when I instantly inhaled a gas, evolved (from the body) through the artificial opening I had made, that almost suffocated me. Being fully aware of the effects likely to occur from such a cause, and perhaps the susceptibility of the body being increased by the depressing powers of the mind, foreboding ill, I directly resigned my scalpel, returned to my room, and was visited indeed by a very severe attack of this endemic, which, though fatal to very many, I had the good fortune to recover from. It was during this attack that the Surgeon of the regiment prescribed repeated doses of powerful cathartics; and it was only on the remission of more urgent symptoms that I first felt pain and uneasiness about the top of the sacrum, with a sense of weight and bearing down on the lower intestines, accompanied also by a difficulty in expelling any fæces. These increasing, I was obliged to sit over the steam of hot water, and, by repeated strong inspirations, to depress the viscera. At those periods, the pain was so excruciating, that I frequently called out loud enough to be heard some distance, which at times brought some of my brother officers about me. After thus straining over the relaxing power of the steam a longer or shorter time, I succeeded in the expulsion of small quantities of a worm-like form; and on rising from the night-chair, (ever with the sensation of remaining fæces,) piles of extraordinary size were observed, which, being considered the cause of my sufferings, were occasionally lanced. So much did I dread the necessity of fæcal expulsions, on the account of the attempts overwhelming me with pain, that I endeavoured to delay them as long as possible. Whenever I held my breath a little I could feel an unnatural resistance, and even in attempting the erect position. The posture of all others (and you may be assured I tried every varying movement) which gave me any ease, or rather respite, from continual pain, was the one on my elbows and knees, on which I used to crawl about night and day for weeks. I found, when I was so situated, the uncomfortable sense of bearing down, &c. left me; but if I attempted the erect position, or to place the pelvis lower than my shoulders, the sense of weight, &c. on the sacrum immediately returned. No sleep, however short, was ever obtained, but by opium; and when I could get at it myself, I used to take large quantities. The sense of resistance on holding the breath was felt only about the top of the sacrum, where the rectum is fastened down; and there, on going to the night chair, was the whole of my excessive suffering referrible, increased, as it was, by the necessity of straining to such a degree as I was always obliged, even to obtain the smallest evacuation. Strange, though I had every professional assistance, or rather attention, and was visited by many, I may say most in the island, never the most distant hint of a diseased rectum was either given by them, or thought of by myself. The piles were occasionally lanced; and I was latterly advised to use sedative enemas, composed of the tinct. opii, ʒi. et muscil. amyli, ℥v. vel ℥vi. pro re natâ. From this I found temporary relief; and after thus enduring for upwards of six weeks, I obtained leave to return to England. The vessel had (fortunately) good accommodation; and I only moved out of my birth from necessity, now and then lancing the piles, still believed to be the cause of my illness, and continuing my enemas, from which latter I found signal benefit, and always resorted thereto on any increase of irritability. I landed at Southampton, where I was compelled to send for professional aid, which only added saline aperients to my medical list. I was also attended by a nurse. After remaining about ten days there, I thought myself able to resume my journey to Devon; and just before entering the coach, I took a large quantum of tinct. opii in enema, and had a few half-grain pills of the opium purificat. if I should require them. The first dose kept me easy till I reached Exeter; on leaving which, finding myself getting worse, I halted at Chudleigh, where, the next day, my relatives met me. On my leave of absence expiring, (after having fruitlessly consulted other professional aid,) finding I could not possibly return to the West Indies, I was, by the great kindness of the late director general of our department, (J. Weir, Esq.) ordered to Guernsey, where, after a time, I arrived, still accompanied by my inveterate foe; and continued the course of palliative means as before. Being confined to my bed still, I used, when a respite from pain allowed, to endeavour to withdraw the mind from its constant reverie, and wished to be released from such a suffering body, by looking over the newspapers; and it was after finishing the more important parts of one, that I cast my eye over the page of advertisements, when among others, I found one noticing a publication (I think by Copeland) on stricture of the recum. It flashed like lightning on my mind, that I had now unmasked my terrible enemy; and I directly decided on sounding the rectum, by the introduction of a bougie; but after many attempts I failed, from the increased irritation not being bearable. However, on reflection, I had, the next day, a still smaller one, which, after a while, was passed through the contraction; and the relief I immediately felt was such, that I slept (with the bougie remaining introduced,) for the first time, without opium. On the withdrawing the bougie, a quantity of blood followed, accompanied by such of the alvine accumulations as could pass through the opening made. The bougie was gradually increased, and on each successive withdrawing was followed by immense discharges, that had accumulated not only naturally, but by the various aperients I had been recommended, every one of which had only been adding to the disease, which most assuredly I should have died by, or rather from, a rupture of the intestines, from excessive distention, produced by an accumulated mass, unable to pass the contracted part.

By the use of the bougie, and attention to the disease, I gradually improved in health; and I at this present time only occasionally introduce the rectum bougie, or take aperients, thereby preventing constipation on the one hand, and accumulation on the other.

This case of mine I conceive to be one of simple contraction of the gut, arising from the effect of powerful purgatives. My not feeling the symptoms until more urgent ones had subsided, prevents my knowledge of its earlier indications of approach. The sensations of having more fæcal matter to expel on rising from the night chair, as also the relief from the irritation of such feelings as I invariably experienced on placing myself on my knees and elbows, so as to keep the pelvis higher than the rest of my body, I attribute to the having forced down the higher part of the gut into the lower and larger, and which of itself gradually, as the power by straining, was taken off, relieved itself. I conceive the inner coat of the rectum to have been greatly relaxed by the united force of straining and the steam of hot water, which I was always necessitated to have recourse to—and this possibly might have occasioned those external tumours, so frequently lanced. It is almost inexplicable, when the symptoms were so well marked, and so steadily enforced on the attention of every medical gentleman who visited me, that the most distant hint of the real malady was never offered; yet I ought to be the last to be surprised, as it was never suspected by myself, though, in addition to symptoms offered to the attention only of others, they were presented to myself by two such as one would think enough to fix the exertion of the mind for their removal, namely, pain and suffering. On the passage, I used sedative enemas. At Southampton, the professional advice was aperients, from a Physician and Surgeon. At Plymouth, though examined by a professional friend, by the finger in ano, yet it was reported as not diseased, and aperients again recommended.

At Guernsey, by accident, (as stated) I first suspected the disease, and sounded the rectum with an urethra bougie of the largest diameter: this failed: the next day I used a small size, and succeeded. The quantity evacuated was immense. Indeed, I have often wondered at the capacity the gut must have attained. Relative to bougies, I always used the plaister, till I obtained some of the elastic; which latter, although in appearance they have every advantage, yet in their actual use I could not continue; as I found on introducing them and leaving them even for a short time in the gut, they were not only extremely difficult, but very painful in their extraction; they felt as if I was drawing out the gut itself, so closely did the temperature of the part make them adhere: I was obliged to keep turning them round in the action of withdrawing them; and on inspection they appeared sticky, and exactly as if they had been held over the steam of boiling water; though I oiled them, &c. prior to introduction. I could introduce them and withdraw them instantly, but no more; I therefore disapprove of them, and never recommend them to others. I should not speak so decidedly of their inferiority, but from having given them a fair trial on my own person, in this most painful complaint, and which I have had from March, 1813, (being then twenty-four years of age.) I think if gentlemen, on introducing an elastic and a plaister bougie, at different times, on the same patient, leaving it a quarter of an hour or more in the canal, and on withdrawing them, make the inquiry, the latter will most likely be preferred. I have found the plaister bougies, when made in a rough manner, also painful in the introduction. Many who make articles such as these without any conception of their use, or such conception or knowledge only as merely relates to the part they are intended for, think any thing, however rough, or however made, will do very well, and keep them accordingly. I had occasion to send from the country to London for four plaister bougies for the rectum, for my personal use, and received four such as I could by no means use. They were partially covered, and no more; so that the cloth came in rags on their tops. This to me in the country was a source of vexation only, as I would not attempt their use. But, on the contrary, a completely covered, and well-finished plaister bougie, I found I could introduce easily, and keep it in the passage as long as I wished, as the longer I left it, it became the more easily retained by taking the form of the gut; and on its being withdrawn, (perhaps owing to the heat of the part in some measure acting on the plaister,) it gave me not the slightest pain, or that feeling of drawing the gut itself with it, which the elastic invariably did. Being quite satisfied of the utility of the plaister bougies, when well finished, I have tried none other, but as above

The plan of treatment most beneficial is, in the morning to inject an enema of cold water; then, after emptying the rectum by the above, to inject an enema of tr. opii and mucilag. amyli, which is retained. In the evening the same. The bougie and aperients occasionally.

Remarks.—The foregoing case was transmitted to me by the gentleman who was the subject of it, on my mentioning the various train of symptoms and sympathetic affections that were produced from habitual costiveness and loaded rectum; and that in females more particularly the constrictive power of these parts was further increased from education and habit

In these cases drastic purgatives, so far from affording relief, are extremely prejudicial, by adding to the quantity of fæces already accumulated.

I believe that patients are often deceived, and very often deceive their medical advisers, by informing them that their bowels are open, when the rectum is blocked up with fæces: this, from the irritation it produces, causes an increased mucous secretion in the lower part of the canal, which is evacuated three or four times a day with a little fæces:—this removes or diminishes the temporary distention, and causes them to believe that their bowels are relaxed; on more particular inquiry it will be found that these patients rarely void a natural stool. I may mention a case or two as illustrative of this.

A. D. complained of a bearing down of the womb; from which she said she had suffered two or three years past, and for which she had used various remedies without benefit; said that her bowels were loose, her catamenia regular, she felt a something falling through her; and that she suffered much uneasiness both generally and locally; her countenance was anxious and hollow.

On examination, *per vaginam*, the uterus was found in its natural situation; the vagina was blocked up apparently by a tumour projecting from behind forwards, which appeared to be from distended rectum encroaching into that canal; the fæces were evacuated by aid of enemas; oily purgatives were exhibited; a bougie was passed into the rectum daily; and the tepid salt water hip-bath was used to allay irritation. After a few weeks the uneasiness and bearing down sensations went off. The rectum got a habit of evacuating its contents, by the occasional aid of oily purgatives and the use of the bougie; (she uses a common wax candle.) Six months after the commencement of this treatment, she said that she had not enjoyed such good health for some years past, and in which latter state her health has remained now upwards of two years.

I was requested by a medical friend to see a lady, for a disease of these parts, attended with a violent leucorrhœa.

On examination, the vagina was felt relaxed and flabby; the rectum, on its posterior surface, like a hardened cord. On introducing the finger *per anum*, it passed with difficulty, and was girt at its extremity, causing the patient a good deal of pain, and she exclaimed, "that is the seat of my malady."

A full-sized urethra bougie was introduced the next day. The day following reports, that she has been much easier than usual, and that she had not passed so natural a stool for many months.

This case is still under treatment. An enema is administered daily, through a full-sized pipe, and thrown slowly up into the intestine. A bougie is used on the alternate days, gradually increasing the size.

With regard to the difference between the elastic gum and plaister bougie, a case occurred to me, which in some measure confirms Mr. ——'s observation.

Some years since, during the treatment of a stricture of the urethra, which was destroyed by caustic, the patient from some circumstances not being able to attend regularly, had an elastic gum bougie to pass. He passed it in the morning, while in bed, after retaining it in the urethra for half an hour. He was unable to withdraw it. By using some exertion, the bougie broke, leaving the broken portion within the urethra. This caused him a good deal of alarm, (fortunately he possessed the least irritable urethra I ever saw.) On immersing the penis in warm water, he was enabled to expel the bougie with the stream of urine. I attributed this occurrence, at the time, to some fault in the manufacture of the instrument, though I was not able to discover any. Might it not then be retained, as the foregoing case suggests, from losing its moisture while in the urethra ?

On the Causes of the Vacuity of the Arteries after death. By James Carson, M. D. of Liverpool. *Communicated by* Sir James Macgrigor.

[From the Medico-Chirurgical Transactions, Vol. XI.]

The Harveian Doctrine of the circulation of the blood, may, I think, be divided into two parts. The first is the course of the blood; the second the explanation of the causes by which it is moved in that course. The arguments advanced by Dr. Harvey on the first of these points, the course of the blood, must, I think, convince every candid enquirer that the blood is conveyed from the heart by the arteries, and returned to it again by the veins. But the illustrious discoverer has not been so fortunate in the second part of his great undertaking. In maintaining that the projectile power of being of a different colour from that discharged, the ventricles of the heart propels the blood through the whole of the arterial and venous canals, and, after having discharged this office, opens the auricular chambers by means of the returned blood, he lays claim to effects which are not warranted from the supposed causes, and which are inconsistent with the established laws of hydrostatics; laws by which the blood, as well as every other fluid, must be governed. But this part of the doctrine of Harvey, admitting it to be philosophically correct, must be rejected in its present application as affording no satisfactory solution of the phenomena. The followers of Harvey, adopting as the foundation of their argument his doctrine of a *vis a tergo*, have enlisted the arteries into the aid of the heart, and contend that the blood is circulated by the combined agency of these powers; but the difficulty is not removed by the supposition; it is only shifted to another part of the system, and the phenomena are not better explained.

It has often created surprise that a doctrine so simple in appearance as the circulation of blood, and pointed out so plainly as we now suppose by facts of daily occurrence, should have been reserved for the discovery of modern times. The knowledge of the circulation seems to have been retarded by one remarkable phenomenon. The arteries, which are now known to constitute the channel of the blood for one-half of its course, were uniformly found to be devoid of that fluid after death. That vessels in which no blood was to be found by the most careful examination after death, should be the constant receptacles of it during life, is a supposition that would scarcely suggest itself to the anatomist; and, if suggested, would soon be rejected from the list of probable conjectures. The arteries were supposed to be the recipients of a vital ærial fluid. One fact indeed of frequent occurrence seemed to be at variance with this belief; and, if the effect of it had not been defeated by an hypothesis, it must, we would suppose, have led to the truth. An artery, when wounded, was constantly observed to discharge blood from the living frame. But the ancient physiologists, unwilling perhaps to degrade the arteries from what they conceived to be their more refined office, and conceiving it impossible, that if these vessels contained blood during life, they could be deprived of it by death, contended that the discharge of blood from a wounded artery was no proof that the vessel contained any blood before it was wounded, but that the injury and pain given by the wound drew blood from other quarters into vessels which contained none before; and that the impetuosity and obstinacy of the discharge arose from the conflict between this foreign intruder and the native aerial spirit. What gave greater plausibility to this supposition was, that the blood shed by the arteries, from the veins, seemed to be not the natural product of the body, but the factitious result of this imagined conflict.

The condition of the arteries after death was urged confidently by the opponents of Harvey as an insuperable objection to the doctrine of the circulation, upon its first promulgation; and was unquestionably one of the greatest obstacles found in the path of the discoverer; and, after all, the explanation given by this celebrated man of the powers by the operation of which the arteries are found empty after death, is most unsatisfactory. He says that the left ventricle, in the last struggles of life, continues to propel after it has ceased to receive blood, and that, by these final propulsions, the blood at the time in the arteries is driven into the veins; and he further asserts, in support of this explanation, that the arteries of animals, who have been killed by submersion in cold water or by mephitic air, will be found to contain blood after death as well as the veins. But there can be nothing more evident, than that the heart, by these abortive impulses, could only drive blood through the more remote portions of the arterial system by some impinged medium; and that this medium, which, upon the hypothesis of Dr. Harvey, could only be blood, must still remain in the arteries. But defective as this explanation is, it has the further imperfection of being built upon an hypothesis that is altogether destitute of proof. This hypothesis is, that the heart continues to propel after it has ceased to receive blood. The heart on the contrary is generally found full of blood after death. The converse, therefore, of what is maintained by Dr. Harvey would appear to be the truth, that the heart retained the capacity of receiving blood, after it had lost the power of discharging it. The statement also by which Dr. Harvey has supported his opinion, has not been confirmed by observation. The arteries of animals which have been killed suddenly by submersion in cold water, or by any of the ways enumerated by Dr. Harvey, have been found equally empty of blood with those of animals killed by lingering disease. Into such a labyrinth of error and evasion will men of the most powerful minds be led when they attempt to shape nature to a conformity with their opinions.

No new light has been thrown upon this subject by the followers of Harvey; and in general it may be observed that after the lapse of two centuries, and though a thousand volumes have been written, and thousands of animals slaughtered to elucidate the subject, the doctrine of the circulation has descended to our times nearly in the same state in which it came from the hands of the original discoverer.

Mr. George Ker, an ingenious and learned surgeon in Aberdeen, struck with the defectiveness and inapplicability of the explanation given by Dr. Harvey and his followers of this remarkable phenomenon, as well as of many others, has in a late publication boldly denied the doctrine of the circulation of the blood altogether, and become the acute, strenuous, and most confident advocate of the opinions of the ancient physiologists respecting the condition of the blood in the living system, and the uses of the arteries.

All the objections urged by Mr. Ker against the circulation had been stated by myself as objections, not against the doctrine of the circulation itself, which I believe to be founded on a basis never to be shaken, but against the causes assigned for the accomplishment of that effect, at least two years before the appearance of Mr. Ker's work, but unquestionably without the knowledge of that gentleman. The causes which I have ventured to assign to the motion of the blood, will, in process of time, I trust, be found to have a real existence in nature, to be adequate to the effects assigned to them, to have been fitly applied, to afford a plain and satisfactory explication of the various phenomena, to answer fully all Mr. Ker's objections, and, in a word, to vindicate a theory, which does so much honour to our country, from all future opposition.

The objection principally dwelt upon by Mr. Ker, the emptiness of the arteries after death, did not pass unnoticed, as may be seen on reference to the inquiry into the causes of the motion of the blood; but as I had not then had an opportunity of submitting my opinions to the test of experiment, I did not state them with that confidence which I even then felt in their truth. I have lately had that opportunity, and I now propose to state the result.

The chief, if not the whole, of the movements of the animal machine seem to be the effect of two powers acting either conjunctly or separately. These are elasticity and irritability. The elasticity of the parts which possess this property is inherent in the structure, and is independent of life. Irritability, which is the property of the muscular substance, is the concomitant of life, and ceases with it. The movements, which are the usual result of a combination of those powers, will not wholly cease at death. The elasticity will still continue to operate; and the result will be different, either from that which would be produced by their combined agency, or from that which would arise from their synchronous destruction.

The motion of the blood seems to be the result of the contractions arising from the irritability of the heart and arteries, and of the resilience arising from the elasticity of the arteries and of the lungs. One class only of these powers is destroyed by death. The resilience of the lungs and of the coats of the arteries possess then an uncontrolled operation.

The resilience of the lungs removes a part of the pressure of the atmosphere from the internal surface of the chest, and perhaps from the internal surface of the vessels by which they are penetrated. To restore to the parts within the chest an equality of pressure with that of the substances without it, the adjoining liquid and less fixed parts of the body will be pressed through every channel that offers into the chest. What is called a vacuum will in effect be made in the chest by the elasticity of the lungs. There will therefore be a draining from all parts of the body towards the chest, to fill up this vacuum. As thus the causes which return the blood to the heart continue to operate, after the heart, the great engine by which it is discharged, has terminated its labours, a greater quantity of blood will be necessarily collected in the neighbourhood of the heart after death, than existed there before it

Various circumstances may intervene to fix the channels in which the blood will flow in its course towards the heart after death. The arteries are powerfully elastic, and when their coats are relieved from the distending force of the heart, become of a diminished calibre. Valves stationed at the roots of the arteries prevent the return of blood from these vessels into the chest. After the small part of the aortic system intervening between the heart and the confines of the chest shall have been, as it usually is found to be, filled with blood, the blood in the rest of this system will sustain no diminution of pressure on the side of the heart.

No obstacle exists in the way of the blood in its course to the chest through the veins. No valves are stationed at the roots of these vessels, and the blood finds an unobstructed course from the roots of the cava into the auricles, from that possibly into the right ventricle and into the pulmonary arteries, and thence into the pulmonary veins. The heart, particularly the auricles and the large venous trunks, the coats of which being inelastic and easily dilatable, being all placed within what may be called the vacuum of the chest, will be distended to their utmost capacity. The additional blood requisite for this purpose can be drawn only from the veins. The place of the blood taken from one part of the venous system will be supplied by that from another. The termination of this process will be the emptying of the arteries into the veins.

If the preceding argument be correct and founded upon true principles, it would follow that, were the elastic powers employed in the motion of the blood disengaged before the muscular powers had ceased to act, or synchronously with that event, a distribution of the blood would be found to exist after death different from that which is now usually observed. The blood would not be found so extraordinarily accumulated in the right auricle, and in all the veins belonging to the system of the cava within the chest, and at the approaches to it; and the arteries and capillary vessels would contain the proportion which upon the supposition of the Harveian theory must have flowed in them before death. I have not been able to devise any method of annihilating before death the elastic influence of the arteries, and therefore some allowance must be made in the phenomena which are to be brought into view for that cause; but I have been successful in removing from all influence after death the elastic power of the lungs, by far the most efficient, by the manner in which the animals were killed in the following experiments. Death was in these cases effected by inducing a previous collapse of the lungs, which was done by making openings into the chest of the living animal, and exposing the external surface of the lungs to the free access of the air.

In the first experiment made with this intention, an opening was made about an inch in length between a pair of the ribs on each side. I expected that sudden death would be the effect of these openings; but in this respect I was disappointed, and at first not a little perplexed. This disappointment I experienced particularly in the case of a large dog. This animal, as I supposed, after the collapse of the lungs, by pressing up the diaphragm by means of the abdominal muscles as far as possible, and then by a rapid and forcible contraction of the intercostal muscles, accompanied by a rapid and forcible contraction of the diaphragm, was enabled to rarefy the air contained between the external surface of the lungs and the chest to such a degree as to occasion a partial dilatation of the lungs, and an imperfect expansion of the heart. Thus life was painfully prolonged for nearly twenty minutes. The sufferings sustained by this animal for so long a period prevented a repetition of the experiment on any other animal in the same manner. The result was in other respects satisfactory. Though the death was tedious, it was ultimately produced by the collapse of the lungs. I had previously performed the same experiment upon a rabbit and a cat. In these the death, though not sudden, was neither so tedious, nor to appearance so distressing as in the case of the dog.

The same appearances were, on dissection, exhibited by all. The muscles were remarkably red; and, when an incision was made into them, they poured out blood. The membranous parts exhibited the blood-vessels as if they had been fully and nicely injected; forming anastomoses which appeared like a netting made of red threads. I was particularly struck with the coats of the intestines; instead of exhibiting the usual pale smooth surface without the vestige almost of a single blood-vessel, they appeared to be composed of a red colored netting, the meshes of which varied greatly both in dimension and in form. The liver was like red morocco. The flesh of the rabbit, which is usually white, was in this case of a reddish color, and all the dissected parts became wet with effused blood. The heart contained little blood. When the chest was opened, and the large vessels it contains were divided, a small quantity of blood only was effused, not much more indeed than from the other parts of the body. The aorta and large arteries, in all the instances, were pale externally, while the accompanying veins were of a blue color. A part of the descending aorta, above the bifurcation of the iliacs, after its extremities had been secured by ligatures, was cut out, and was found to contain a small cylinder of blood generally coagulated. So it appears that the white color of the arteries did not arise from their being empty of blood, but from the want of transparency of their coats. With respect to the vessels, which the stomach, the intestines, and the membranous parts exhibited in so beautiful a manner, I do not pretend to say what part of them may have been arteries. Supposing, however, that these carcases exhibited the distribution of the blood as it really existed in life, it is very evident that the blood, not only of the larger arteries, but of the smaller vessels, whether they be arteries or veins, must, in consequence of death produced in the usual way, be emptied into the large veins. I think it probable, however, that what are called the capillary vessels, may, in consequence of this mode of killing the animal, be found to contain more blood than the share that belonged to them during life; for the elasticity of the coats of the arteries, the effect of which, as I before stated, I had not been able to devise any plan of counteracting, by contracting the bore of these vessels, would propel a part of the blood that was flowing in them at the moment of death into the vessels, the coats of which were inelastic and dilatable.

For the purpose of comparing the appearances of two animals of the same kind, killed in different ways, two rabbits were killed on the 20th of September, 1819, one of them by causing the lungs to collapse before death, the other after a different manner. In the case of the first of these rabbits, the belly was opened freely from the scrobiculus cordis nearly to the pelvis, and the lower surface of the diaphragm exposed to view. An opening, fit to admit my two fingers, was made through the muscular part of the diaphragm on each side. The sound of air rushing through the orifices, announced the collapse of the lungs. As the animal possessed no power of contracting the openings made in the diaphragm; as its struggles would probably tend to widen them still more; and as therefore the capacity of dilating the lungs, even in the smallest degree, no longer remained, the animal instantly died. The appearances exhibited by the dissection of this rabbit, were precisely similar to those already described of the bodies of animals killed by the previous collapse of the lungs. The vessels, particularly of the intestines, stomach and mesentery, were very distinct and full of blood, forming frequent anastomoses with each other, in the way already described. The flesh was reddish, and when cut into, bled. The heart and vessels about it contained only a moderate quantity of blood; for scarcely any blood was found, after the division of the vessels, to have been effused into the shell of the chest. The other rabbit was killed by thrusting a sharp instrument between the vertebræ of the neck. It died instantly, and was immediately opened. Scarcely was the vestige of a blood-vessel to be observed on the surface of the intestines or stomach, which had a pale appearance, excepting where they were tinged by the color of their contents. The membranes scarcely exhibited any traces of vascularity. The flesh was white, and when cut into, appeared to be dry, discharging at some parts a drop or two of blood. The liver was of a dusky brown color. The trunks of the veins were swollen and rounded; whereas in the other rabbit they appeared flat, and to contain a thin layer of blood. A considerable quantity of blood was found in the shell of the chest, after it had been opened, and the large vessels it contains divided.

A few days after, a sheep was killed in the same manner as the first of the above-mentioned rabbits. When the openings were made through the diaphragm, the sound of air rushing into the chest, announced still more plainly the fatal collapse of the lungs, and the last expiration. The animal, after making a few heavings with the chest, became lifeless. Several other sheep had been killed at the same place at that time, and there was an opportunity of comparing the carcase of this animal with those of the others. Scarcely any traces of the smaller vessels were observable in the stomach, intestines, peritoneum or mesentery of the other sheep, while in the same parts of this animal they appeared in great abundance, and as injected with red wax. The appearance was so remarkable as to strike the butchers, and the persons whose attention I directed to it, with surprise. The color of the fat was browner than usual. The muscles of this animal being at all times red, did not exhibit so marked a difference as in the case of the rabbits, but when cut into they discharged blood. The larger arteries, where I had an opportunity of seeing them, contained a small cylinder of coagulated blood. The flat and tape-like appearance of the large veins, which I had observed in the rabbit killed in the same manner, was in this case very remarkable.

The results of these experiments I think fully warrant the conclusion, that the difference of the distribution of the blood after death from that in which, according to the Harveian theory, it must exist in the living system, arises chiefly from the elastic power of the lungs; and that the emptiness of the arteries and of the smaller vessels observed after death, admits of a satisfactory explanation from the supposed operation of this cause, combined with that of the elasticity of the arterial canals.

Before I conclude this paper, I am anxious to express my hope that some benefit may result to anatomy from the examination of animals killed by the collapse of the lungs; in particular a better chance seems to be promised by it of tracing the vascular system to its various terminations. According to the Harveian doctrine, the blood must flow from the minute and ultimate branches of the arteries into the corresponding branches of the veins. But the knowledge of the manner in which the vessels form the communication necessary for this purpose, is still a desideratum in medical science; and, as in all the ordinary modes of death, these vessels are always deprived of their contents; and, as in these circumstances, the knife of the anatomist and the microscope, though directed by all the colorings which the art of injecting can supply, have been found incapable of bringing this union into view, it was likely to have remained so. But the examination of animals in which the smallest vessels contain at least their full proportion of the red fluid that filled them before death, seems to hold forth the hope of some more satisfactory knowledge being attainable in this dark and mysterious part of physiology.

Liverpool, October 22, 1819.

On the Native Country of the Potato, and on some American Plants. Communicated by A. B. Lambert, Esq., F. R. S., *&c. &c.*

[From the Quarterly Journal of Science and the Arts, for Oct. 1820.]

It has long been a desideratum among botanists to ascertain the native country of the potato, *Solanum tuberosum*. I beg leave now to offer some communications on that subject, which I have lately received in a letter from the celebrated author of the *Flora Peruviana*, Don Jose Pavon, who resided many years in South America, dated Madrid, September 23, 1817, who says, "The

Solanum tuberosum grows wild in the environs of Lima, in Peru, and fourteen leagues from Lima on the coast; and I myself have found it wild in the kingdom of Chili. I can assure you this is the truth. The Indians cultivate it in great abundance in Peru and in Chili, and call it *Papas*. There are other wild species, such as *Solanum montanum* which also gives a *radix tuberosa.*" Of this I have received from the above mentioned author of the *Flora Peruviana* fine wild specimens with the root. In another letter, dated Madrid, Nov. 10, he again repeats, "I mentioned to you that *Solanum tuberosum* grows spontaneously near Lima, and in the kingdom of Chili, where it was also found by my companions Dombey and Ruiz;" I have lately received from Don Pavon very fine wild specimens of *Solanum tuberosum*, collected by himself in Peru. Don Francisco Zea, companion and friend of the celebrated Mutis, who long resided in South America, assured me, when he was in this country, that he had often found it wild in the forests near Santa Fé de Bogota, observing at the same time, that the reason why Baron de Humboldt had not found it when he was in that country, was, because he had not time to examine those places where it grew. In a letter (addressed to Mr. Frazer, of Sloane-street, Chelsea,) lately received from Dr. Baldwin, an excellent American botanist, who has lately returned from the coast of South America, in the Congress frigate, of the United States, he says, "I found many plants that appeared to be new during my excursion in South America, and had the satisfaction of submitting most of my specimens to M. Bonpland, who has settled himself in the vicinity of Buenos Ayres. It was not the least pleasing of my discoveries to find the famous *Solanum tuberosum* growing spontaneously among the rocks on Monte Video; in a part of the country, too, where this valuable vegetable is not cultivated. I also found it on the same side of the river in the vicinity of Maldonado." A species of *Solanum* was found by Commerson in the neighbourhood of Monte Video, named by Dunal, in his *Synopsis of the Genus Solanum*, page 5, *Solanum Commersonii*, from a specimen preserved in the Museum at Paris. It is also described in the *Supplement to the Encyclopédie Méthodique*, Vol. III. p. 746. I have no doubt that this is the same with the plant found by Dr. Baldwin. On making inquiry, relating to this plant, of Captain Bowles, who has lately returned from the South American station, and who has resided for a considerable time at Buenos Ayres, he told me he knew it well, and that it is a common weed in the gardens and in the neighbourhood, bearing small tubers like those of the potato, but too bitter for use. Whether this be the original stock of our common potato improved by cultivation, future observation must determine. Molina, in his *History of Chili*, speaking of the potato, says, " It is indeed found in all the fields of that country, but those plants that grow wild, called by the Indians *Maglia*, produce only very small roots of a bitter taste."

There appeared lately, in the English newspapers, an account of a root which is very much cultivated in *Peru* under the name of *Arracacha*, and which would be a very desirable acquisition to this country. The before-mentioned Don Francisco Antonio Zea, formerly professor of botany at *Madrid*, who has lately arrived in this country from *Santa Fe de Bogota*, (New Grenada) informs me that the *Arracacha* grows abundantly at *Santa Fé*, *Junga* and *Pamplona*, where it is very much cultivated and eaten in the same manner as we do potatoes in this country; and says that the plant which produces it belongs to the natural order *Umbelliferæ*, and that it has a tapering root, about six inches long and two inches thick. I have little doubt that this is the same with the *Heracleum tuberosum*, *foliis pinnatis; foliolis septenis; floribus radiatis;* of Molina, who gives the following account of it: " This plant resembles very much in its leaves, flowers and seeds, the *Common Cow Parsnip*, but is distinguished from it by the greater number of roots it bears, which are six inches long and three inches thick, of a yellow colour, and of a very agreeable taste."

Don Zea has also afforded me another piece of information, relating to a small species of *Mays* or *Indian corn*, which was introduced last year from France under the name of *Mays de Poulet*, and which ripens its ears two months earlier than the common kind. I had suggested to Mr. Sabine, (who has mentioned in the *Horticultural Transactions*,) that it was very probably the *Zea Caragua* of Molina; and my opinion is now confirmed by Don Zea, who knew it at once on its being shown him. He informs me that it is cultivated in great abundance in Chili by the Indians, particularly in the district called Caragua, whence its name.

I beg leave to mention another communication, also from Don Jose Pavon, relating to a substance which has been several times sent from Spain, under the name of Spanish tinder, resembling very much the Moxa of the Chinese. We never have been able, till now, to ascertain the plant from which it is manufactured, which proves to be *Echinops Strigosus*. There are three different sorts; the first, *Yesca de Espagna*, or *Amadou d'Espagne*, *O de Cardo de las flores* (*ex floribus;*) the second, *Yesca d'Espagna* or *Amadou d'Espagne O de Cardo de los hogas* (*ex foliis;*) the third, *Yesca d'Espágna*, or *Amadou d'Espagne O de Cardo de las tallas* (*ex caulibus.*)

I take this opportunity of inserting another observation which I have also received from Spain.

The tree which produces the balsam of Peru, *Myroxylon Peruiferum*, appears to be the same as *Toluifera balsamum*, or that which yields Tolu balsam. The following account of it is given by Don Hippolito Ruix: "The balsam of Quinquina is procured by incision at the beginning of spring, when the showers are gentle, frequent, and short It is collected in bottles, where it keeps liquid for some years, in which state it is called white liquid balsam; but when the Indians deposit this liquid in mats or calabashes, which is usually done in Carthagena, and in the mountains of Tolu, after some time it condenses, hardens into resin, and is then denominated dry white balsam of Tolu, by which name it is known in the druggists' shops. Having examined the specimens of *Toluifera balsamum*, from the *herbarium* of Sir Joseph Banks I find them exactly the same as *Myroxylon Peruiferum*, and which was sent to Linnæus by Mutis, as the plant producing the balsam of Peru. I have lately received fine specimens in flower and fruit, and also a specimen of the trunk of the tree with the bark on; it is between three and four inches in length and about three inches in diameter, and was collected by the authors of the *Flora Peruviana.*

Outline of an Inquiry on the Pathology of Consumptive Diseases.

By JOHN ABERCROMBIE, M. D.

PART I.

[From the Edinburgh Medical and Surgical Journal, for Jan. 1821.]

Death from consumption in the British Islands has been estimated, on the most moderate computation, at one-fifth of the whole mortality, and there is much reason to fear that the evil is increasing.* The subject, therefore, is one of intense interest; and it seems most desirable that every effort should be made to enlarge our acquaintance with the pathology of the disease, in the hope that something may be done to diminish, in some degree this frightful mortality.

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* In great cities, the proportion is higher. In London, it has been generally reckoned about a fourth, and sometimes nearly as high as a third.

The history of consumption presents a melancholy picture of the uncertainty of medical observation. While the extensive mortality excited the eager attention of physicians in every age, a great variety of remedies, and various modes of treatment were from time to time proposed. The most flattering testimonials were given of their efficacy, and numerous cases were detailed, which, after having exhibited all the usual symptoms of consumption, terminated favourably. Yet each of these remedies, after enjoying an ephemeral reputation, has either forfeited the public confidence, or sunk entirely into oblivion. A slight review of them is calculated to throw considerable light upon this inquiry.*

The oldest, and perhaps the most extensive treatment of consumption, was upon the tonic plan. The remedies of this kind that were chiefly relied on, were, light and nourishing diet, friction, cold-bath, exercise, sea-voyages, preparations of iron, and various medicines of an astringent or stimulating kind, such as guiacum, seneka, the balsams, and the vegetable bitters. Hippocrates seems to have relied chiefly on exercise, in regard to which he directs, that it should be gradually increased to the extent of walking ten or fifteen miles a-day. Aretæus and Celsus advise nearly the same remedies, with very particular directions about diet. Their chief dependence seems to have been on sea-voyages; but Celsus also attaches much importance to walking, friction and bathing. Galen appears to have relied chiefly on bathing, and his directions are long and very minute, in regard to various modes of using it, adapted to different modifications of the disease, especially to the different states of hectic fever. In one case, general immersion is recommended; in another, cold water applied only to the thorax; in a third, a poultice of herbs, moistened with snow water; and a fourth method is described with great minuteness, in which warm air is first employed, then warm water, and lastly, cold water.

In the long period during which the opinions of Galen regulated the medical schools, the same mode of treatment prevailed; and at a more advanced period, when the pathology of the disease came to be better understood, there were added to the general plan remedies of a detergent nature, as they were called, or such as were supposed to cleanse and heal the ulcers of the lungs. Of these the most esteemed were, various preparations of sulphur, balsamic fumigations, myrrh, sarsaparilla, cinchona, preparations of mercury and antimony, balsam of Copaiva, and chalybeate waters. During the period to which this outline refers, various other remedies are mentioned by individual writers, many of them of a superstitious kind, and others altogether frivolous; but, upon the whole, it appears that the prevailing treatment of consumption was upon the tonic plan, from the days of Hippocrates to the middle of the seventeenth century; and about this period, the judicious Sydenham did not hesitate to affirm, that "neither mercury in syphilis, nor bark in intermittents, is more effectual than riding in consumption, provided the patient take care to have his linen well aired, and to continue his journey long enough—the longer as he is the more advanced in life."

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* See the learned and valuable work of Dr. Young.

About the beginning of the eighteenth century seems to have commenced that revolution in medical opinion on this subject, by which the treatment of consumption was changed from the tonic to the antiphlogistic plan. Traces of it, indeed, are found at an earlier period; but it seems to have been about this time that it was brought into general notice, chiefly by the writings of Stahl and his followers. The remedies employed under this system were those calculated to allay vascular action, as repeated small bleedings, antimonials, and other nauseating medicines, emetics, mineral acids, nitre, cicuta, anodynes, and cool spare diet. Sea-voyages were still in repute, but their efficacy was ascribed to the slight and continued nausea. The tonic remedies and balsams, formerly in use, were now condemned, from a dread of exciting febrile or inflammatory action. The chief promoters of the antiphlogistic plan seem to have been Stahl, Dover, Huxham, and Bryan Robertson; and of writers of a later date, we are to reckon in this class the distinguished names of Pringle, Monro, Van Swieten, and Cullen.

During the period, however, to which these observations refer, there were many physicians of no small note, who retained an attachment to the tonic treatment of consumption. Among these may be reckoned Barry, De Haen, Marryat, and others—and among those of later date, Salvadori, May, and Rush of Philadelphia. Salvadori treated consumption by violent exercise, with a liberal allowance of salt meat and wine. May considered it as being entirely a scrofulous disease, to be treated like any other scrofulous ulceration, by tonics, and nourishing diet. Rush contends that consumption is a disease of debility, except some cases in which there are inflammatory symptoms, and his remedies are, a great deal of exercise, bathing, bark, and iron. "The hardships of a military life," he says, "have effected cures in many cases of confirmed consumption, and a riding postman has been relieved more than once by a pursuit of his occupation." Frank also was an advocate for the treatment of consumption by tonics and nourishment; but, upon the whole, the antiphlogistic plan seems to have been the more prevalent, from the beginning of the last century, till near the end of it, when many of the remedies formerly in use were in a great measure lost sight of in this country, under the growing fame and indiscriminate use of digitalis. In regard to the efficacy of this medicine, there was indeed some difference of opinion among the great number of physicians who employed it, but by some it certainly was considered as nearly a specific, in the incipient stages of consumption; and by one writer it was reported, after a very long trial, to have cured forty cases out of seventy-two, taken indiscriminately at all stages of the disease. It is unnecessary to remark how far this active remedy has lost its reputation in consumptive cases. It may be given occasionally as a palliative, perhaps sometimes as a placebo, but I believe no person in the present day expects it to cure consumption.

On reviewing the mass of observations that have been transmitted to us by the various writers now referred to, we find numerous cases which terminated favourably, after they had exhibited all the usual symptoms of consumption; some of them in circumstances which appeared to be hopeless. Some of these recoveries took place under the most active antiphlogistic treatment; others under the use of tonics and nourishing diet, and not a few with little or no medical treatment, or under the employment of remedies altogether inert and frivolous. From such various and contradictory evidence, on the authority of writers of sound observation and undoubted veracity, what conclusion can be drawn by an unprejudiced inquirer, but that, under the name of consumption, there have been included affections, differing widely from each other, and requiring different, and even opposite modes of treatment;—and that there are disorders which assume many of the symptoms of this alarming disease, while they are in their nature widely different. The inquiry is extensive and most important, and it opens an interesting field of research, in which, though it may appear unpromising, there is certainly the hope of doing something that may ultimately tend to diminish the mortality from chronic affections of the lungs.

By pulmonary consumption, we understand an ulceration of the substance of the lungs of a peculiarly unhealthy character, little, if at all, disposed to heal; and the symptoms which are considered as indicating the presence of it are cough, purulent expectoration, hectic fever, and emaciation. But when we come to investigate the subject minutely, we find reason to believe that there are various affections which present many or all of these symptoms while they are in their nature remarkably different from consumption; and that they may even be fatal after long protracted disease, and yet the substance of the lungs be found perfectly healthy. On the other hand, we find the true consumptive ulceration running its course, with considerable varieties in the symptoms, and while some of the ordinary symptoms are entirely wanting. The subject, therefore, resolves itself into two parts:—I. The Diseases which resemble Consumption—II. The true consumptive Ulceration.

PART I.

Of the Diseases which resemble Consumption.

When in a young person, about the age when consumption generally appears, and especially in a family which has already suffered from it, we find cough, with uneasiness in breathing, pain referred to some part of the thorax, frequency of pulse, and general weakness—and these symptoms going on for some time, so as to assume a chronic form—we naturally take the alarm, and dread a tendency to consumption. These symptoms, however, may arise from various other affections, some of them as untractable as true consumption, but others affording a more favourable prognosis, and frequently requiring a treatment considerably different. They may be referred to the following heads:

I. Sympathetic Cough, (so called.)
II. Irritation of the Diaphragm by Diseases of the Liver, Spleen, and other parts contiguous to it.
III. Chronic Inflammation and Ulceration of the Larynx.
IV. Chronic Disease of the Mucous Membrane of the Bronchiæ.
V. Chronic Inflammation of the Pleura.
VI. Disease in the Posterior Mediastinum, or the Glands connected with the Lungs.
VII. Ulceration of a Healthy Character from Active Inflammation.
VIII. Hæmoptysis and its Consequences.

Sect. I.—*Of Sympathetic Cough.*

This indefinite term I employ merely for the sake of a name, and to include under it certain anomalous cases, in which obstinate cough has been supposed to arise from causes seated in organs at a distance from the lungs I forbear from speculating upon the connection; some of the facts are curious. Valsalva describes a case in which the only morbid appearances were in the brain. The peculiar symptom was, that every motion of the head produced a paroxysm of cough. A case somewhat similar is described by Lechelius. Lieutaud relates a fatal case of violent cough, with purulent expectoration, in which the only morbid appearances were in the frontal and occipital sinuses, which were full of pus. Sauvages mentions obstinate cough arising from irritation of the auditory passages, especially the Eustachian tube. "I have never," says De Haen, "observed a more severe, obstinate, and untractable cough than that which affected a young woman, and, having resisted every remedy, ceased after the expulsion of a callous substance from the uterus." Worms in the intestines have been considered by many practitioners as a cause of cough. Every one is familiar with the term *nervous cough.* It is, in general, employed to express any chronic cough that is not consumptive; but of these, we shall afterwards find, there is great variety. But there is a nervous or hysterical cough, which we cannot refer to any of these causes. One of the most singular cases that I have seen of this kind occurred in a young lady, stout and plethoric. She was affected with the most violent cough I ever observed, which occurred in paroxysms, and continued for an hour or more at a time, until respiration was nearly suspended, and the attack often terminated in a state bordering on asphyxia. The paroxysms occurred only once in four or five days, and in the intervals she was in perfect health. After resisting various remedies, it was removed by full bleeding from the arm.

Cough is often supposed to arise from the *stomach.* The subject is extremely obscure, but by no means unworthy of attention.* We know, that, in persons liable to asthma, the paroxysm may be induced by indigestion; and there certainly are cases of cough, which, after resisting the usual remedies, yield to treatment directed to the stomach and bowels. A case of this kind, which had attracted much attention, has been communicated to me by a professional friend. It occurred in a gentleman between 50 and 60 years of age, and was a peculiar, loud, noisy cough, which had considerably reduced his strength, and for a long time resisted every remedy. It disappeared at last under a course of laxatives. The same kind of cough is uniformly induced in this gentleman by any inattention to diet by which his stomach is disordered, and yields only to the same treatment. A man, mentioned by Langelot, was affected with incessant dry cough, and, at length, wasting and death. The case was considered as decidedly phthisical, but the lungs were found perfectly healthy. The only morbid appearance was in the stomach, which appeared to have been affected with chronic inflammation.*

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* See the valuable work of Mr. Abernethy on the Constitutional Origin of local Diseases; and Dr. Wilson Philip on the Dyspeptic Phthisis, in Med. Chi. Trans. Vol. VII. p. 499.

In young women, especially of the higher ranks, a state is met with which is very apt to excite the alarm of a tendency to consumption. The patient is found pale, sallow, listless, and inactive with bad appetite, disturbed sleep, and a small, frequent pulse. There is frequently nausea, especially after eating, and a feeling of oppression or exhaustion across the epigastrium; sometimes a more fixed uneasiness in one side, about the margin of the ribs, increased by cough and by full inspiration. There is a short dry cough, and the breathing becomes quick and uneasy upon any exertion, as going up a stair or an ascent. There is a feeling of coldness sometimes alternating with the flushes of heat. The bowels are generally costive, sometimes obstinate; the menses often retained, suppressed, or very scanty; but the affection, I believe, is not necessarily connected with the state of menstruation. It is treated successfully by country air, gentle exercise, and a combination of tonics with gentle laxatives. I have found nothing more useful than sulphate of iron, combined with aloes, taken three times a-day, in doses of two grains of the former with as much aloes as shall keep the bowels fully open, without purging. The other preparations of iron, and the vegetable bitters, may be used in the same manner. The abdomen is sometimes enlarged, and the affection seems to be connected in a great measure with derangement of the muscular action of the intestinal canal, especially the colon. It is not to be removed by strong purgatives, but by the combination of gentle laxatives with tonics. Friction of the body is also useful with warm clothing, tepid bath, or sponging with vinegar and water, at first tepid, afterwards cold.

There is also met with, especially in young females, a fixed pain in the side, about the margin of the ribs, often increased by inspiration, sometimes accompanied by cough, and occasionally by considerable oppression in breathing, occurring in paroxysms, not unfrequently with hysterical symptoms. It is in many cases extremely obstinate, and is apt to be referred to the liver, the spleen, or sometimes to the lungs. I have seen reason to believe that the seat of it is often in the arch of the colon; and, after having resisted a variety of active treatment, I have found it yield to the combination of tonics and gentle laxatives, as sulphate of iron and aloes, with extract of hyoscyamus.

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* Miscell. Curiosa. An. 1675. Obs. 14.

Sect. II.—*Cough from Irritation of the Diaphragm, by Diseases of the Liver, Spleen, &c.*

Cough and uneasiness in breathing, are frequent attendants on diseases of the liver, both acute and chronic. It is when the diseases in the liver is not the prominent symptom, that the case comes to be of importance in connexion with this inquiry. The cough, in such cases, is at first dry, but whenever there is a frequent irritating cough, from whatever cause, there comes to be an increased secretion from the bronchial membrane, produced by the irritation. Hence, there may be considerable expectoration, and even sometimes bloody.

Case I.—A lady, aged 35, had severe cough, with considerable expectoration; dyspnœ, which was sometimes severe, especially in the night; pain of the chest and side; frequent pulse; restless nights, with feverish paroxysms and morning sweats. The expectoration was viscid, frequently with a mixture of puriform matter, and occasionally of blood. In addition to these symptoms, she was liable to periodical fits of vomiting, which attacked her generally in the evening, and pain, which was referred to the left side of the abdomen, about the region of the spleen; but no disease could be detected, either there or in the liver. These complaints went on for upwards of two years, without materially reducing her, or impairing her strength. But, in the third year, her strength began to fail. She had then diarrhœa, anasarca, and gradual emaciation, and died exhausted about three years from the commencement of the complaint. Towards the end of her life, the vomiting became less frequent, but the severe rending cough continued, with copious expectoration, and severe fits of dyspnœa. On dissection, no morbid appearance could be detected in the lungs, or in any part of the thorax. The spleen was enlarged and hard. On the upper surface of the liver there was a considerable tumefaction, the surface of which was studded with small, hard tubercles: it protruded against the diaphragm, and pressed it upwards. But though the diameter of the liver was thus considerably increased at this part, it did not appear to project downwards from its natural situation. The other viscera were healthy.

This case is the most remarkable example of the kind that has occurred to me, and it shows strongly how much the symptoms may assume the appearance of an affection of the lungs. The only peculiarities were the fits of vomiting, the cough being louder and more noisy than the ordinary cough of consumption, and the length of time during which the symptoms continued without impairing her strength. Many cases of a similar kind are on record. In a case by Portal, similar symptoms were connected with scirrhus of the pancreas, and disease in the mesenteric glands, without any morbid appearance in the thorax. The symptoms were, frequent cough, slight fever, gradual wasting, and at length death without any other prominent symptom. In a case by Bonetus, similar symptoms were connected with disease of the spleen; and, in another, by the same writer, the only morbid appearance was in the right kidney, the lungs being perfectly healthy—there had been cough for two years, and gradual wasting. In a case by Morgagni, there was a tumour, which weighed lb. i. attached to the posterior part of the stomach. The symptoms were, dry cough, difficult breathing, loss of appetite, and watchfulness. A young woman, mentioned by Laennec, had cough, dyspnœa, copious expectoration, hectic fever, and great wasting. After the symptoms had gone on for some time, and she was considered as decidedly phthisical, she was seized with violent pain in the epigastrium, and soon after discharged, by stool, an immense quantity of hydatids. From that day she recovered, and was soon well.*

In the cases now referred to, the pectoral symptoms seem to have arisen from mechanical irritation of the diaphragm. But there is another way, in which an affection, resembling consumption, arises from disease of the liver. The upper surface of the liver is attacked by inflammation, which terminates in an abscess, the inflammation extends through the diaphragm to the pleura, and an adhesion takes place betwixt the diaphragm and the lower part of the right lung. The matter from the abscess making its way upwards, passes, by means of this adhesion, into the bronchiæ, and is spit up. Cough, with purulent expectoration, then continues, and may either wear out the patient with all the usual symptoms of consumption, or the abscess may gradually heal, the expectoration at the same time gradually diminish, and the patient recover. If a case of this kind be seen from the commencement, it is in general easy to distinguish the nature of it, but, at an advanced period, it has very much the appearance of consumption. This affection is illustrated by the two following cases:

CASE II.—A lady, aged 40, had been affected for some months with uneasiness in the region of the liver, when, on the 5th of October, 1815, she was seized with violent pain there, and vomiting. By the usual remedies, she was much relieved, but some degree of uneasiness continued for several weeks. It then seemed to subside, but, after a short interval, returned with violence, accompanied by vomiting, and fits resembling syncope. The whole region of the liver was tense and tender to the touch, with evident enlargement. The pulse varied, being sometimes frequent and small, and sometimes quite natural. A variety of practice was now employed with little relief—the pain was at times so violent, that for many nights together, she was unable to lie down in bed. These paroxysms alternated with intervals of ease, but by the repetition of them for nearly three months, her strength was very much reduced. In the end of December, she began to have cough, with some expectoration, which had a purulent appearance. On the 14th of January she was seized with a violent fit of coughing, and expectorated purulent matter to the amount of at least lb. ij. On the 15th, she expectorated, in the course of the day, at least lb. i. and about the same quantity, on each of the two following days. The quantity then diminished considerably until the 25th, when she again brought up about lb. i. and the same quantity a few days after. The enlargement in the region of the liver then subsided, and from that time there was no great discharge, but she continued to have cough, with purulent expectoration. as in a case of consumption, with great weakness and emaciation. These symptoms continued for several weeks; the expectoration then began to diminish, and gradually ceased. She recovered her strength, and, by the end of May, was free from complaint. She has enjoyed good health ever since.

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* Laennec L'auscultation Mediate, Tom. I. p. 278.

Case III.—A soldier had an attack, which was considered as peripneumony, and was accompanied by pain in the lower part of the right side. It terminated in purulent expectoration, with wasting, and colliquative diarrhœa, and he died in three months. On dissection, there was an abscess, three inches in diameter, in the upper part of the liver, a strong adhesion of the right lung to the diaphragm, and a sinus, six inches long, passing through the substance of the lung, and communicating with the abscess of the liver. The lungs were, in other respects, sound.*

In cases such as these, it has been supposed that a diagnosis might be founded on a mixture of bile with the matter expectorated. I observed no such mixture in the former of these cases, and I see no reason for expecting it in all cases, for if the abscess be lined by coagulable lymph, as is likely to be the case, it is cut off from any connection with the biliary ducts.

In regard to the treatment, little need be said. In the early stages, it must be directed to the inflammatory disease in the liver—in the advanced stages, it must consist in supporting the strength, and favouring the healing of the abscess, by tonics and nourishing diet.

This affection is met with in a less active form, not advancing to suppuration, but continuing for some time, in what is called a sub-acute state, producing symptomatic cough, and other pectoral symptoms, and distinguished by tenderness in the region of the liver. If taken in time, it yields to treatment directed to the liver, especially topical bleeding and blistering, in the early stages and afterwards a little mercury, with opium. I have observed it chiefly in elderly people, but it is not a common disease in this country. In these and the other cases of symptomatic cough, as it may be called, the cough is generally louder, and more noisy than in a pulmonic affection, the lungs being more freely inflated than they are likely to be when the cough is connected with disease in the thorax.

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* Edinburgh Medical Essays, Vol. I. p. 217.

SECT. III.—*Chronic Inflammation, and Ulceration of the Larynx, or the upper part of the Trachæa.*

This affection forms the laryngæal phthisis, to which more attention has been paid on the Continent than in this country. It is a disease of not unfrequent occurrence, and of extreme danger, and it presents a most important subject for investigation. The symptoms, vary considerably in different cases, according to the seat and extent of the disease, but many of the cases are with great difficulty distinguished from the ordinary consumption of the lungs. There is frequent cough, with purulent expectoration, frequently mixed with blood, gradual emaciation, hectic fever, at last diarrhœa, and death, with the usual appearance of phthisis. But, on dissection, the lungs are found perfectly healthy, the morbid appearances are confined to the inner surface of the larynx, or the trunk of the trachæa, and usually consist of one or more well defined ulcers, sometimes with caries of the cartilages, and sometimes with irregular fungous elevations of the mucous membrane.

The symptoms by which this disease is distinguished from pulmonary consumption are not uniform, and are often obscure. There is generally a feeling of irritation about the larynx, and sometimes acute pain referred to a particular spot on the larynx or the upper part of the trachæa; in some cases the larynx is painful on pressure; the voice is generally more or less affected with hoarseness, or a peculiar huskiness; in many cases it is much impaired, so that the patient can only speak in a whisper, and sometimes it is entirely lost. The cough is severe; in some cases occurs in paroxysms, almost resembling the paroxysms of hooping-cough, and sometimes it excites vomiting. The proper expectoration is purulent and in small quantity, sometimes mixed with small membranous portions, and often bloody; but it is always to be kept in mind, that when the lungs are much irritated by cough, kept up by any cause external to them, an increased secretion from the bronchial membrane is apt to be produced by the constant irritation, or even the real chronic inflammation of the membrane. Hence the expectoration sometimes consists of considerable quantities of viscid mucus from the bronchiæ, streaked with pus from the real seat of the disease. In many cases the breathing is considerably affected, and this may either be a permanent difficulty with wheezing, or it may occur in paroxysms. These attacks are sometimes accompanied by palpitation, and other symptoms so severe, that the affection has been mistaken for disease of the heart. These symptoms seem to occur chiefly when ulceration is seated in the lower part of the trunk of the trachæa, about the bifurcation; especially if it be accompanied (as it frequently is) by fungous elevation of some of the parts connected with the ulcer. In some cases there is difficulty of swallowing, the attempt exciting pain and paroxysms of cough.

The principal morbid appearances are chronic inflammation and ulceration of the inner surface of the larynx, or the trunk of the trachæa; sometimes with caries of the cartilages, and sometimes with thickening of the membrane and fungous elevations, which considerably narrow the canal. In some cases small abscesses are found. These, however, generally burst before death. In one case which will be referred to, such an abscess burst externally, but without arresting the disorder. The disease may come on gradually in the form of chronic inflammation, or it may supervene upon an acute attack, ulceration being left as the result of it. In some cases tubercles have been found on the mucous membrane of the trachæa, and the affection has arisen from these passing into ulceration. The disease may be fatal by gradual emaciation, like a common case of consumption; or rapidly by the accession of inflammatory symptoms; or suddenly by suffocation. The prognosis is in all cases extremely unfavourable. Except the disease can be arrested in its first or inflammatory stage, it will probably be fatal. It is therefore of the utmost importance that the first appearance of it be watched with the greatest care, and treated with the greatest decision. The remedies are obvious, though they may be varied a little according to the circumstances of the case. General bleeding may often be required; topical bleeding must be used extensively and repeatedly. The other remedies are blistering, issues, antimonials, very spare diet, and perfect rest, purgatives, and perhaps emetics; calomel may be useful in some cases after the first activity is subdued When the disease has got into the state of ulceration, I cannot say what is the best treatment, or whether any treatment can arrest the progress of it. Those from which we might expect benefit, are issues, emetics, opiates, antimonials, warm air, perhaps balsamic fumigations, and preparations of iron, and perhaps in some cases small quantities of mercury with opium. The French believe that the disease has in some cases a syphilitic origin.

Morgagni seems to have been the first who attended to the peculiar nature of this affection At an early period of his life, a case occurred to him, which had been considered and treated as pulmonary consumption, by the most eminent physicians. The symptoms were cough, with purulent and bloody expectoration, and a fixed pain a little below the larynx, without fever. Morgagni considered it as a disease of the trachæa, and it got well by confinement, rest, regulated temperature and spare diet. I suspect that the disease in a slighter form is more common than is supposed. I have repeatedly met with cases of obstinate cough which had resisted the usual remedies, and at last yielded to topical bleeding on the larynx. I have formerly described a case of this kind, which occurred in a gentleman about fifty, and was remarkable from the extreme violence of the paroxysms of coughing. They resembled the most violent hooping cough, and sometimes continued for more than an hour without intermission, until they threatened suffocation or apoplexy. After resisting the most active treatment, the case yielded readily to two applications of leeches to the larynx.* The great importance of this subject will be a sufficient apology for adding some cases illustrating the various modifications of the disease.

Case IV.—A man, aged 33, after sitting in a current of air when much heated, was seized with cough and pain extending from the throat to the breast. After a short time, his voice was much impaired: the cough was violent; the expectoration at first mucous, afterwards purulent; he then had hectic paroxysms, and night-sweats; dull uneasiness of the breast, and rapid emaciation; there was a constant tickling irritation of the throat, and deglutition was painful. His voice at last was entirely lost, and he died completely emaciated in less than three months from the commencement of the disease. *Dissection.*—An ulcer of the superior and middle part of the larynx, occupying half its circumference at the upper part, and extending to the epiglottis; left arytenoid cartilage ossified and carious; surface of the cricoid cartilage covered by red elevations; the membrane covering the right arytenoid was thickened and ulcerated; mucous membrane of the trachæa vascular and thickened; lungs adherent, and some small gray tubercles in them; otherwise healthy.†

Case V.—A young man, aged 16, after exposure to cold when heated, had head-ach, pain of the throat, cough, fever, and epistaxis. After a fortnight, he had severe diarrhœa, and tight breathing: cough continued, with thick expectoration, and febrile paroxysms; then great debility, involuntary stools, tenderness of the abdomen, harassing cough, and he died in about a month. *Dissection.*—Pharynx and adjoining parts red; the larynx red, and an ulcer at the base of the epiglottis; the lining membrane and chordæ vocales thickened; behind the arytenoid cartilages, a small opening led into a sac, which had contained pus; lungs healthy; bronchial membrane dark-coloured; inflammation, and some appearances of ulceration of the mucous membrane of the intestines.*

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* Edinburgh Medical Journal, Vol. XV.

† Prost. Med. Eclairée par l'observation et l'ouverture des Corps.

CASE VI.—A man, aged 39, after pneumonic symptoms, had a tickling sensation in the throat, with constant desire to cough; alteration of voice, and hoarseness; copious expectoration of frothy mucus, with purulent particles interspersed in it; frequent pulse; lassitude; sleep nearly prevented by incessant cough; emaciation. Died in four months. *Dissection.*—Superior aperture of the larynx was diminished by thickening of the membrane; one arytenoid cartilage, and part of the other destroyed by ulceration; trachæa healthy.†

CASE VII—A girl, aged 19, had cough, difficult breathing, with a peculiar noise, somewhat resembling croup; pulse natural; no debility or constitutional disturbance; ill three months Died unexpectedly in the night. *Dissection.*—Rima glottidis contracted; posterior part of the inner surface of the larynx occupied by an ulcer; a second ulcer on the posterior part of the trachæ, a little below the larynx; and a third a little lower, which nearly embraced the circumference of the trachæa, and was about one-third of an inch broad; bronchiæ and lungs healthy.‡

CASE VIII.—A man, aged 34, had cough, with mucous expectoration; pain of the larynx; hoarseness. After some weeks, the cough increased, and the expectoration become purulent; fever, and some dyspnœa. Died gradually exhausted in two months. *Dissection.*—Ulceration of the mucus membrane of the larynx; arytenoid cartilages carious, and covered with pus; lungs and trachæa quite healthy.§—In another man, with similar symptoms, a tumour formed on the fore part of the neck, which suppurated and discharged matter, and left a fistulous opening, which communicated with the larynx. The symptoms were relieved for a short time; but they soon returned; his voice was entirely lost; and he died gradually exhausted. His body was not examined.

CASE IX.—A man, aged 49, after the sudden disappearance of glandular swellings of his neck and arm-pits, with which he had been affected for seven or eight months, had cough with tight breathing, and at times a sense of suffocation; frequent pulse; weakness and wasting; after some time he had purulent and fetid expectoration, which was sometimes mixed with frothy and pituitous matter; fits of coughing after meals, which excited vomiting; increasing weakness; afterwards he had habitual dyspnœa, and fits of palpitation; voice hoarse; at length orthopnœa; died in six months. The case had been considered as disease of the heart. *Dissection.*—In the inferior part of the trunk of the trachæa near the bifurcation, there was an ulcer occupying about half its circumference, and about an inch and a half in length; the cartilages denuded and eroded; the ulcer was covered with yellow pus; mucous membrane around it inflamed; some puriform mucus in the bronchiæ: all the other parts healthy, except a very small portion of the lower part of the right lung, which was sligtly hepatised, but not to such a degree as to sink in water.*

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* Prost. Med. Eclairée par l'observation et l'ouverture des Corps.
† Beddingfield's Compendium of the Practice of Physic.
‡ Beddingfield, ut supra.
§ Journal de Med. Tom. IX. An. xiii. New Series, p. 185.

Case X.—A man, aged 69, had dry cough, attacking him in paroxysms, which he neglected for six months; then occasional fits of dyspnœa and suffocation, which usually continued some hours. At first they occurred seldom, but in the ninth month wêre more frequent. At this time expectoration began, which was glairy and ropy; voice impaired and afterwards lost. In the fourteenth month he began to waste, and had pain in the chest, behind the upper part of the sternum; hectic fever; diarrhœa; fits of dyspnœa continued; expectoration copious but without pus. Died in the last degree of wasting after sixteen months: the fits of dyspnœa having become less frequent and less severe for some time before death. *Dissection.*—Larynx sound; two inches below it, the membrane of the trachæa became red, and the redness became more intense the lower down, until it led to a large and deep ulcer, extending half an inch into the bifurcation on both sides. Its surface was unequal, and covered with various tubercles, white, red, and brown: bronchiæ below healthy; lungs quite sound, except a slight adhesion on the right side.†

Case XI.—A woman, aged 50, liable to dyspnœa and hæmoptysis, had constant dyspnœa and wheezing, with exacerbations, which threatened instant suffocation: feeling of heat and tightness behind the sternum: cough occurring in violent paroxysms, with viscid expectoration: voice hoarse: occasional faintings: pulse natural. After some time dyspnœa increased: face livid: was obliged to sit up in bed with her body leaning forward: violent pulsation of the heart on the least motion: expectoration streaked with pus died suddenly after fourteen months. *Dissection.*—An ulcer two inches long, occupying the whole circumference of the trachæa immediately above the bifurcation cartilages in some places exposed and eroded; but in other places the canal was narrowed by the thickening of the parts: bronchiæ loaded with puriform fluid, and the membrane red: lungs sound, except some small portions which were slightly hepatized: heart sound.‡

Case XII.—A woman, aged 40, after the healing of an ulceration of the pharynx, had cough with a feeling of tickling in the glottis: purulent expectoration streaked with florid blood: pulse frequent; voice altered; continued five or six months with little change, and was then cut off by a rapid inflammatory attack after exposure to cold. *Dissection.*—A circular ulcer in the upper part of the trachæa, about one-sixth of an inch in diameter; lungs sound; bronchiæ vascular and filled with puriform fluid.§

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* Cayol, Recherches sur la Phthisie Trachéale.
† Ibid.
‡ Ibid.
§ Hastings on Diseases of the Bronchiæ, p. 246.

CASE XIII.—A man, aged 47, had violent cough; hoarseness; some dyspnœa; fever; wasting; died in three months. *Dissection.*—A small ulcer found near the larynx; lungs healthy.*

As this affection has been little attended to in this country, I have thought it of importance to refer to these examples, calculated to illustrate its various modifications, and to establish the pathology of it as a fatal disease, quite distinct from any disease of the lungs. It also occurs in combination with the ordinary tubercular phthisis; and this seems to be so frequent, that from the examination of a number of cases in the French hospitals, M. Bayle supposes the larynx to be affected in one case out of six. The ulceration of the larynx seems in some of these cases to be the primary disease, and in others a secondary affection, occurring as part of that general tendency to ulceration of the mucous membranes which exists in the advanced stages of consumption. When it is the primary disease in a person in whom tubercles exist in the lungs, it is not unlikely that the constant irritation kept up by the laryngæal disease may excite the tubercles into activity, and thus prove the immediate cause of phthisis. A man, aged 30, had cough with pain referred to the larynx, and mucous expectoration, mixed with small pieces of pus; his voice was hoarse and sibilous; deglutition very difficult, the attempt exciting vomiting; hectic fever; died in five months. *Dissection.*—An ulcer nearly an inch in extent, made a free communication betwixt the larynx and the pharynx Posterior part of the cricoid cartilage was so carious, that it projected into the pharynx at both sides. The lungs were tubercular, and abscesses had begun to be formed at the upper part of them.† A woman who had been long affected with cough and pain of the larynx, was afterwards seized with pain of the breast, dyspnœa, loss of voice, and died gradually exhausted. An ulcer was found in the larynx, and induration with abscess of the left lung.‡

On the other hand, when the laryngæal or trachæal ulceration appears as the secondary affection, it seems to occur merely as a part of that general tendency to unhealthy ulceration, which exists in many of these cases, particularly ulceration of mucous membranes. This occurs most remarkably in the mucous membranes of the intestinal canal, but may also be observed in the larynx, the trachæa, the bronchiæ, the œsophagus, and even in the urinary bladder. The ulcers in such cases are small but numerous, less extensive, less deep, and more numerous than in the cases of primary ulceration of these parts.

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* Badham on Bronchitis, p. 162.

† Frank, Act. Institut. Clinic Vilnensis, An. II. p. 63.

‡ Bayle Recherches sur la Phthisie Pulmonaire.

CASE XIV.—A gentleman, aged 45, after suffering much from scrofulous tumours on the neck, which suppurated slowly, had cough with frequent pulse; night sweats; emaciation and weakness; expectoration scanty, and consisting of whitish phlegm with a small mixture of puriform matter; his voice was weak and hoarse; and the cough had a peculiar husky sound; breathing sometimes a little frequent, but complained of no pain, and took a full breath without uneasiness; died gradually exhausted after five or six months. *Dissection.*—Left lung sound: right extensively indurated, and full of small abscesses: mucous membrane of the larynx thickened, with some ulceration: mucous membrane of the trachæa covered through its whole extent by a succession of minute ulcers, not above the twentieth of an inch in diameter.

The only other modification of this affection which deserves to be mentioned is, when tubercular disease exists both in the lungs and the trachæa at once, and in both is brought into activity about the same time. A girl, aged eight, liable to cough and glandular swellings, was seized with dry cough, difficult breathing, and slight fever, which appeared in the evening. After five days, great oppression, more fever, great dyspnœa, and difficult deglutition; copious perspirations; pain referred to the neck. About the eleventh day, cough increased; occurred in frightful paroxysms, with puriform expectoration streaked with blood, and membranous concretions; died on the twenty-fifth day. *Dissection.*—The lungs were full of steatomatous concretions, many of which had begun to suppurate; there were similar concretions in the trachæa and the larynx, which were ulcerated, and furnished much pus.* In another case, in which an affection of the lungs terminated in nearly the same manner, tubercles and ulcers were found in the trachæa and the larynx, and an abscess, containing ℥i. of matter betwixt the larynx and the pharynx; the lungs extensively tubercular and suppurated. The power of swallowing was lost in this case.†

SECT. IV.—*Chronic Inflammation of the Mucous Membrane of the Bronchiæ.*

The acute inflammation of the mucous membrane of the bronchiæ was long confounded with pneumonia. It is now perfectly distinguished from it in a pathological point of view, though it must be confessed, that in practice the diagnosis is sometimes difficult.

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* Portal sur la Phthisie Pulmonaire, Tom. I. p. 18.
† Ib. p. 101.

The disease, in its chronic form, may supervene upon one of these acute attacks, or upon a severe catarrhal affection, which, indeed, is nearly allied to it, or it may come on gradually, without being preceded by any acute symptoms. In general, however, it is preceded by an acute attack in some form, especially a severe and protracted catarrhal affection, commonly called a neglected cold.

The morbid condition which then takes place consists, in some cases, of a succession of small superficial ulcers of the bronchial membrane, which can be distinctly traced in the larger branches. In other cases it is a red fungous appearance of the membrane, with irregular granular elevations, and sometimes merely a dark-red colour, with a morbid condition of the secretion. The secretion also varies considerably in different cases and different states of the disease. In some cases it is a viscid, glairy, transparent fluid; in others, viscid and opaque; in others, yellow and viscid; in many, friable, with the sensible properties of purulent matter; and there cannot be a doubt that pus is really formed, as it can often be distinctly traced to an ulcerative process. In general, the expectoration consists of a mixture of some of these, as the opaque viscid matter, with a mixture of pus, and frequently of blood, and the blood is sometimes in considerable quantity.

The disease admits of great variety in its extent, being in some cases confined to the larger branches; in others extending into the smaller ramifications; and in some severe cases it appears to occupy nearly the whole extent of the bronchial membrane. In these cases we trace a redness of the membrane into the minute branches, but we ascertain the disease chiefly by its effects on the secretion, the bronchial tubes being nearly filled with an opaque yellow fluid, having the sensible qualities of purulent matter. When cleared of this fluid, the substance of the lungs is found quite healthy.

In an affection which admits of such variety, both in degree and extent, the symptoms must vary exceedingly, and it is impossible to describe all the modifications of them. Those cases which are of the greatest importance in this inquiry approach so nearly to the characters of consumption, that, in practice, it is often difficult to distinguish them. There is frequent cough, with some uneasiness in the chest, which is in some cases described as a tightness, in others as a rawness or soreness, giving some pain in breathing, and a full inspiration is apt to excite cough. There is considerable expectoration, which in some cases is viscid and tenacious; in others has the sensible properties of pus, and sometimes consists of small quantities of pus, mixed with white frothy fluid. The disorder may go on for a considerable time without much impairing the general health, but rendering the patient able for little exertion, from an extreme susceptibility of cold, and a tendency to have the symptoms aggravated by any exposure. In other cases there is, from an early period, frequent pulse, with dyspnœa, hectic fever, anasarca, perspirations, diarrhœa, and wasting, and all the usual appearances of phthisis. In this manner, it may be fatal by gradual wasting, but the fatal termination often occurs more rapidly in one of the attacks of aggravation of the symptoms from accidental exposure to cold.

The diagnosis betwixt this disease and consumption is often extremely difficult. It must depend, not so much on any particular symptom, as on a careful attention to the history of the disease, and to the character of the expectoration. The expectoration I think is generally more copious than in true consumption, and more tenacious; though it has the purulent colour, it has less friability; when spit upon water, and collected in considerable quantity, it hangs more together, part floating on the surface, and part sinking to the bottom, with viscid filaments running from the one to the other, and connecting them together; and other filaments hanging down from the floating part in loose fringe-like appendages. If examined carefully on successive days, it will be found to vary its characters considerably, being on some days more puriform, and on others more mucous and glairy. The expectoration in true consumption is more uniform in its appearance, that is, after it has become decidedly purulent. It is more apt to sink in water, and has less tenacity, in so much, that after a considerable quantity has been collected, each separate sputum may often be observed lying quite distinct from the rest, and on shaking the vessel, may be seen floating or rolling about without any cohesion. I do not say that these marks are to be relied on, but they are worthy of attention, and the subject deserves minute investigation. Something also is to be learned from the history. The cases are most likely to be this bronchial affection, which have supervened upon an acute inflammatory attack, or on severe catarrhal fever or measles; while the cases which have come on slowly and insidiously, assuming gradually a more and more unfavourable appearance, are more likely to be the true consumption of the lungs.

The prognosis is much more favourable than in the true consumption, and many cases recover perfectly, even at an advanced period, after the symptoms have assumed the most alarming appearance, and the patient is much reduced. But it is also often fatal by progressive emaciation, as in consumption, and exhibits on dissection the morbid appearances already referred to, without any disease of the substance of the lungs.

CASE XV.—A man, aged 33, after severe catarrhal symptoms with an exanthematous eruption, had cough, copious expectoration of an opaque fluid entirely resembling pus; short quick breathing; small frequent pulse; night sweats and diarrhœa. He died suddenly after indulging in wine, about a month after the attack *Dissection.*—The lungs were quite sound without either tubercle or induration. The mucous membrane of the bronchiæ was red and thickened, and the bronchial tubes contained much puriform fluid, similar to that which had been expectorated*

CASE XVI.—A man, aged 25, had pain of chest, with a sense of load or weight in it; difficult breathing; a hoarse cough with expectoration; frequent pulse; and strong action of the heart. After repeated attacks for two years, the disease became permanent, with copious expectoration, occasionally streaked with blood; profuse perspiration; gradual emaciation and death. *Dissection.*—Heart and lungs quite healthy; mucous membrane of the trachæa and bronchiæ inflamed; the former slightly; the latter more considerably; the branches contained a great quantity of frothy fluid.†

CASE XVII.—A girl, aged 15, after a febrile attack with cough and dyspnœa, had severe cough, with copious expectoration, composed of pus and mucus, and sometimes bloody; debility; increasing emaciation; perspirations; expectoration becoming more purulent; death in two months. *Dissection.*—Lungs healthy, except a little harder and heavier than natural. Trachæa and bronchiæ full of puriform fluid. Bronchial membrane thickened and highly vascular, and small ulcers were found in various parts of it.‡

Dr. Willan frequently met with the disease in London, supervening upon catarrhal fever. There was cough, with thick viscid expectoration, often bloody, and in some cases a mixture of fetid, greenish matter, hectic fever, sweats, and diarrhœa. They all seem to have recovered by topical bleeding, blistering, and antimonials.§

There is another modification of the disease, which occurs in persons rather advanced in life. There is cough, with copious expectoration, varying in its characters, sometimes distinctly purulent; but the prominent symptom is difficulty of breathing. In some cases it is permanent dyspnœa, with suffocating cough; in others it occurs in paroxysms, like asthma, but the paroxysms are generally shorter than in the true asthma. They are apt to occur in the morning, with long fits of coughing, and are relieved by expectoration, the bronchiæ being sometimes cleared of immense quantities of it. They have also a connection with the state of the stomach, and are apt to occur an hour or two after dinner. The disease may go on for years without materially injuring the general health; but it renders the patient extremely susceptible of cold, by which inflammatory symptoms are apt to be induced; and it is usually by one of these attacks that it is fatal. It presents nearly the same morbid appearances which have been already referred to, but generally with more induration of the substance of the lungs; and in some cases, especially those which have terminated by an inflammatory attack, cavities are observed like very small abscesses; but it is doubtful whether they are really abscesses, or whether they are merely the bronchial cells, full of purulent matter.

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* Bayle. Recherches sur la Phthisie Pulmonaire. Obs. 48.

† Roberts. Trans. of College of Physicians. Vol. IV. p. 131.

‡ Hastings on Inflammation of the Mucous Membrane of the Lungs. p. 315.

§ Willan on the Diseases of London.

Chronic disease of the bronchial membrane may go on to a fatal termination, as an idiopathic disease, or it may exist in combination with other morbid conditions of the lungs. The most important of these are two. (1.) The ordinary tubercular consumption. In this combination the bronchial disease may either be the primary or secondary affection. In the former case, it is probable, that, tubercular disease having previously existed, the bronchial affection may prove the immediate cause of exciting it to action; in the latter, it appears as a part of the general tendency to ulceration of mucous membranes which occurs in cases of tubercular phthisis. This combination will modify the characters of the expectoration, the proper expectoration of the tubercular disease being mixed with that of the bronchial affection. Another modification arises from combination with tubercular disease which had not suppurated. A man, aged 30, had first catarrhal symptoms, then hæmoptysis, and afterwards cough, with fever and weakness; the expectoration mucous, and in part purulent. He had afterwards night-sweats, rapid emaciation, diarrhœa; the expectoration became purulent and copious; and he died with all the appearances of consumption. Both lungs were most extensively affected with tubercular induration, a very small part only being sound, but without any appearance of suppuration.* (2.) Chronic disease of the substance of the lungs, of the nature of chronic peripneumony; or the effect of it, simple induration, not tubercular, or hepatisation of the pulmonary substance. In every case of peripneumonia, the expectoration must be derived from the bronchial membrane, except when it advances to suppuration; so that this disease is probably accompanied in all cases by more or less of the bronchial affection. The disease, beginning in this way, may pass into a chronic form, in which the chronic disease of the membrane with its usual symptoms, is combined with induration of the lung. The expectoration, in these cases, being often puriform, and very abundant, may give the appearance of abscess of the lung.

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* Bayle, Recherches sur la Phthisie Pulm. Obs. 26.

CASE XVIII.—A man, aged 25, after acute peripneumonia, continued to have cough, with copious expectoration, which was mucosopurulent; rapid wasting, and death in two months. *Dissection.*—Both lungs were indurated like liver in three fourths of their substance; but without any appearance either of suppuration or tubercles. The appearance of the bronchial membrane is not mentioned, but the expectoration must have been derived from it.*

In another case, the disease was found at an earlier period. A man, aged 36, had difficult breathing the lungs being dilated with a great effort and a rattling sound; he had cough with mucous expectoration, and died in a month. The lungs were extensively hepatised, but without tubercles. The bronchial membrane below the bifurcation was red and thickened, and covered in many places by a deposition, resembling the membrane of of croup. Had tubercles existed in either of these cases, they would probably have been excited into action, and would have been found in a state of suppuration. In some of these cases, however, an appearance presents itself which is apt to be mistaken for suppurated tubercles. In cutting through the hepatised portion of lung, drops of purulent matter start up at numerous points, giving the appearance of numerous small abscesses; they seem to be merely drops of the puriform secretion, discharged from the bronchial canals when they are cut across.

There is still another modification of chronic disease of the bronchial membrane, which, though of rare occurrence, deserves to be noticed. The exudation from the diseased membrane assumes a firm and membranous appearance, and is spit up in the form of polypous concretions or cylindrical tubes of considerable extent, exhibiting the ramifications of the bronchiæ. This appearance was observed by some old writers, and was then considered as an actual discharge of the vessels of the lungs from extensive destruction of their substance. A young man, mentioned by Tulpius, expectorated a tubular portion of this kind, the length of a finger, and branching like an artery. He recovered at that time, but died of pectoral complaints a year after. Another patient, mentioned by the same writer, brought up, with much blood, a similar mass, branching out like the hand.* A gentleman, mentioned by Dr. Nichols, after an inflammatory attack, coughed up large portions, hollow, very tough, and branching like blood-vessels. He continued to discharge them frequently for seven years, and was otherwise in good health.† A boy, aged five years, mentioned by M. Bussiere, had cough, with occasional hæmoptysis, for a year; and, about a fortnight before his death, began to spit up firm membranous substances, shaped liked vessels. On dissection, the trachæa and bronchiæ, through their whole extent, even into the smallest branches, were lined by a membranous deposition, which adhered to the inner surface of these parts by very fine filaments, and was easily separated. The lungs in other respects were sound.‡ A gentleman, mentioned by Dr. Cheyne, had cough, dyspnœa, hoarseness, and puriform expectoration, and occasionally brought up firm membranous portions, of a semi-cylindrical shape, which appeared to have been thrown off from a part of the trachæa, above the bifurcation. They were of a much greater density than the membrane of croup, and of a finer white; consisted of a succession of layers, and were about a line in thickness. The case was in an active form at first, and was treated by repeated bleeding; and he recovered, having continued for some time to expectorate smaller portions of the same membranous substance.§ A woman, mentioned by the German translator of Portal on Phthisis, expectorated large quantities of the same matter, very firm, in some places almost cartilaginous, and having exactly the appearance of the bronchial ramifications: they were so large, that it seemed inconceivable how they had passed through the glottis. She recovered perfectly in a few weeks.

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* Broussais. Histoire des Phlegmasies Chroniques. Tom. I. p. 68.

Bronchial inflammation, in its active state, requires the most decided antiphlogistic treatment in its early stages; but the period for active practice is soon over; and if the efficient treatment has been neglected at the proper period, there is great danger, either that the disease will be fatal, or that it will pass into a chronic state, in which it is likely to prove extremely tedious and untractable.

In the early stages of the chronic disease, or what may be termed the subacute state of it, benefit is derived from topical bleeding, blistering, issues, rest, cool spare diet, regulated temperature, mild emetics, antimonials combined with opiates, Dover's powder, and digitalis. Some rely much on calomel combined with opium. Dr. Hastings recommends extract of cicuta, with small doses of ipecacuan. When the disease is decidedly in a chronic state, with general debility and wasting, it is to be treated entirely upon the tonic plan, by nourishing diet, a cautious allowance of wine, gentle regular exercise, change of air, friction of the body, sponging with vinegar and water, cold or tepid, and remedies of a tonic or stimulating kind, combined with mild opiates, as the cough may require. Of the remedies employed with this view, a great variety have been recommended; they act nearly on the same principle. The most useful are the following: bark in decoction, or in substance; strong decoctions of the vegetable bitters, with a proper proportion of laudanum, or tincture of hyoscyamus, in each glass; preparations of iron, with opiates; balsam of copaiva; myrrh; colchicum; gum ammoniac; seneka; casearilla; lime-water; horehound. Kerckhoffs recommends the Viscum album as of great efficacy, either in powder or decoction; and the powdered bark of the Salix alba, with a sixth part of sulphur, made into an electuary with syrup of poppies.* Keeping up a pustular eruption on the thorax, by an ointment containing tartrite of antimony, is said to be sometimes extremely beneficial. It is in this affection, I imagine, that the tar vapour is useful. The paroxysms of dyspnœa, which occur in the disease in elderly people, often do not yield to the antispasmodics which relieve asthma. I have found nothing so useful in some of these cases as a moderate dose of laudanum, with a small quantity of tartrite of antimony in solution, perhaps one-sixth or one-fourth of a grain, or such a quantity as can be taken without exciting vomiting.

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* Tulpii, Observationes Medicæ, Lib. II. cap. xiii.

† Philosophical Transactions, 1731, No. 419.

‡ Ibid. No. 263.

§ Edin. Med. Journal, Vol. IV. p. 441.

A leading character of this disease is a remarkable susceptibility of cold; and when it proves obstinate, a most important measure is removal to a mild and equable climate. It is probably in these cases that this measure has been chiefly beneficial.

It is highly satisfactory to know, that, upon this general plan, many cases have been treated successfully, after they had assumed an alarming appearance, and had exhibited many of the characters of an advanced stage of consumption, severe cough with purulent and bloody expectoration, febrile paroxysms, perspirations, debility, and emaciation.* In this state it is certainly a disease of great danger, but it is never to be despaired of.

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* Trans. of the College of Physicians, Vol. VI. p. 27.

* See Richter on Mucous Consumption, Hastings, Badham, Willan,

SECT. V.—*Chronic Inflammation of the Pleura.*

This affection is of great importance in this inquiry, as it assumes in a great degree the characters of phthisis, and I suspect is often mistaken for it. The symptoms are cough, with some degree of pain in the thorax, generally either under the sternum, or in one side; tightness and oppression of breathing. The pain is increased by coughing, and by bodily exertions, as walking, and sometimes considerably impedes respiration. The cough is at first short and dry, afterwards there is mucous expectoration, often bloody; and in the advanced stages, it is apt to assume a puriform appearance, and is sometimes decidedly purulent. The pulse is generally rather frequent, but is sometimes very little affected. In this state the symptoms may continue for a considerable time, without producing much constitutional disturbance; but as the disease advances there is debility, with emaciation, hectic paroxysms, night-sweats, diarrhœa, and death by gradual exhaustion, in many cases with great difficulty of breathing, and symptoms resembling hydrothorax.

The morbid action which is going on during this course of symptoms, originates in inflammation, confined to a circumscribed portion of the pleura, and in general not assuming much activity. There is reason to believe that it may continue in this state for some time, and then subside, leaving perhaps adhesion at the part, but no morbid affection of a serious kind. In other cases it is more fixed, and spreads over a greater extent of the pleura, in some cases nearly over the whole of one side It produces deposition of coagulable lymph, and effusion of a turbid fluid, with flocculi of yellow matter; and frequently the whole assumes a puriform appearance. This effusion may either be contained in the general cavity of the pleura, or in a small portion of the cavity, forming

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Bayle, Portal, and some very interesting cases by Dr. Chapman in the Medical Communications, Vol. I. which had all the symptoms of advanced phthisis, and recovered under the use of cinchona in doses of ʒi. three times a-day. Is the remarkable case described by Mr. Abernethy referable to this head? I am inclined to think it is. The patient had severe cough, with extreme emaciation, and a pulse at 140. She spit up in each 24 hours more than a pint of mucus, mixed with pus, and streaked with blood, and had constant diarrhœa, with black and offensive discharges. She took twice a-day a grain of opium, with gr. ss. of calomel, and recovered perfectly. The calomel affected her mouth after she had taken twelve pills. From that time the stools became of a natural colour and consistence; the other symptoms subsided, and soon ceased.

a cyst lined by coagulable lymph, the remainder of the cavity being obliterated by adhesion. In a case by Dr. Armstrong, an abscess had been formed immediately under the pleura pulmonalis, betwixt it and the substance of the lung. The quantity of fluid has sometimes been found to amount to seven or eight pounds. The lung in such cases is compressed, and has a firmer appearance than natural, in consequence of the compression; but it may be entirely free from disease, except a coating of coagulable lymph on its surface. Its appearance has been frequently compared to the lung of the fœtus. It has been in some cases so compressed, and so concealed by coagulable lymph and yellow flocculent matter, that it has appeared at first sight to be wanting; and it is probably in cases of this kind that a whole lung has been supposed to be destroyed. In other cases, the inflammatory action spreads into the substance of the lung, producing induration, and the other usual consequences. The affection may also be complicated with tubercular disease, in which case the tubercles will probably be found in a state of suppuration. But the disease may exist without any such combination, and may go through its course to a fatal termination, without any disease of the substance of the lungs.

The expectoration in this disease must generally be from the bronchial membrane, as in all cases in which there is frequent irritation of the lungs, without disease of their substance. At first it is merely an increased secretion; but in the more advanced stages, it seems to amount to chronic inflammation of the membrane; hence the expectoration may assume a puriform character. But there is another source of puriform expectoration; for cases have occurred in which the puriform matter, formed in the cavity of the pleura, has found its way by a small fistulous opening through the substance of the lungs, into a branch of the bronchiæ, and has been spit up in large quantities; the substance of the lung being quite sound, except this small fistulous canal. Cases have also occurred in which the fluid has found its way outwards, by an opening betwixt two of the ribs.

The following cases will illustrate the leading phenomena connected with this most important affection. In the first of them I had an opportunity of observing it at an early period, its progress being arrested by another disease, of which the patient died.

Case XIX.—A young man, aged 19, of a family which had suffered from consumption, was affected, in October, 1819, with short dry cough; pain in the thorax towards the right side; sense of tightness in the chest; some constitutional disturbance, with restless nights; pulse little affected. The complaint had entirely the appearance of incipient phthisis. The symptoms had continued with little change for six or seven weeks, when in the middle of December he was seized with a violent pain in the right temple, and fell down suddenly, deprived of sense and motion. He soon recovered his recollection, but was affected with hemiplegia of the left side, and his speech was very inarticulate. He then lay with very little change for several weeks; during which time he was entirely free from his pectoral symptoms. In the middle of January he began to improve a little in his paralytic complaints, and as this took place his cough began to return, with pain in the right side. For three or four weeks he continued to have cough, sometimes severe, but his speech was quite distinct, and the motion of the left leg was greatly improved; the arm continued completely paralytic. On the 15th of February, he was again suddenly attacked with loss of speech, preceded by pain in the back of the head; and he lost the power of swallowing, which he never recovered. His speech returned in a very short time. From this time, the pectoral symptoms again disappeared and never returned. He was fed by means of an elastic gum tube till the 20th of March, when he died gradually exhausted. *Dissection.*—On raising the dura mater, a remarkable depression appeared, on the right hemisphere of the brain, on the anterior part of the middle lobe. This was found to arise from an extensive portion, which was broken down into a soft pulpy mass, without distinct suppuration and without fetor; it extended nearly the whole depth of the hemisphere. Adjoining to it, there was a small abscess, no larger than a bean, lined by coagulable lymph. There was a small quantity of fluid in the ventricles. On raising the brain a remarkable appearance was observed in the basilar artery. It appeared externally to be very much enlarged, but when cut into was found to be solid, its cavity being completely filled up for about an inch in length, by a firm white substance. Anteriorly to this portion there was a coagulum of blood in the artery. The other parts of the brain were sound. In the thorax there were extensive adhesions; and at the lower part of the right side, betwixt the lung and the ribs, and extending down upon the diaphragm, there was a considerable deposition of coagulable lymph, which was soft and transparent. The lower part of the right lung was rather firmer than usual; the substance of the lungs in other respects was quite healthy.

CASE XX.—A man, aged 22, had been long in hospital affected with cough and slight mucous expectoration; a fixed dull pain in the left side of the thorax; and frequent pulse. He had afterwards diarrhœa, and died after a long illness in the last degree of emaciation. *Dissection.*—The left cavity of the pleura was full of a gray ropy fluid, the plura was thickened, red, and covered with a white friable exudation two lines in thickness. The lung was compressed, and its substance rather fleshy, but not otherwise diseased.*

CASE XXI.—A young man had cough and pain of the right side, which was not severe but never gone; increased by exercise; febrile paroxysms. The cough was chiefly troublesome in the night; afterwards diarrhœa; wasting; anasarca; and death in three months, with extreme emaciation. *Dissection.*—Left lung quite sound; the right was attached to the ribs by recent adhesions, except at one place, where it was free from adhesion ; and a circumscribed cavity was left betwixt the two pleuræ, which was lined by a thick coating of coagulable lymph, and contained about lb.iss. of purulent matter. The substance of the lung was a little firmer than natural, but crepitating.*

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* Broussais, Histoire des Phlegmasies Chroniques. Tom. I.

In the following case, the disease was complicated with tubercles:

Case XXII.—A man, aged 22, had severe cough, at first dry ; afterwards with thick and white expectoration ; general undefined uneasiness across the thorax. When he lay on the right side, his breathing was oppressed; when on the left, he was harassed with cough ; so that he was generally obliged to sit up ; frequent pulse ; wasting ; died in five months. *Dissection.*—Right lung much diminished in size, and full of tubercles with some abscesses ; the cavity of the pleura full of a milky fluid, and the pleura covered with a thick exudation. Left lung hepatised, and with some tubercles not suppurated.†

Case XXIII.—A man, aged 30, after a pneumonic attack had cough, with white opaque expectoration ; short oppressed breathing, and pain in the left side of the chest. which disappeared on the 28th day of the disease. The cough continued, and the expectoration became purulent and fetid, with night-sweats, emaciation, diarrhœa, and death in four months. *Dissection.*—Right lung adhering extensively, but healthy, except a small part of the inferior lobe, which was firm, with one or two tubercles. In the left cavity of the pleura lb.iss. of greenish fetid pus ; pleura thickened and covered with a thick albuminous layer, with albuminous bands which crossed from one pleura to the other. Superior part of the left lung perfectly sound. The inferior lobe was compressed and flattened, but not otherwise diseased, except that two fistulous openings passed through it, and made a communication betwixt the bronchiæ and the collection of matter in the cavity of the pleura.‡

Case XXIV.—A man, aged 62, had pain in the chest and right side; oppressed breathing ; frequent pulse and cough with expectoration, which was first mucous, then bloody, and then purulent ; wasting ; diarrhœa ; and death in five or six weeks. *Dissection.*—Right lung adhering, except at one part on the right side, where there was formed by the two pleuræ a cavity lined with thick flocculent matter, and full of pus ; pleura forming this cavity was in some places covered with an adventitious membrane a line and a half thick. Two thirds of the lung sound. The lower third was compressed and firmer than usual, and a fistulous opening three inches long passed through it, which admitted a female catheter, and made a communication betwixt the bronchiæ and the collection of matter in the cavity of the pleura.§

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* Broussais, Histoire des Phlegmasies Chroniques. Tom. I.
† Ibid.
‡ Bayle. Obs. 43.
§ Bayle. Obs. 44.

In a case mentioned by the Italian translator of Portal, after symptoms similar to those in the above cases, a tumour formed externally on the right side of the thorax, which burst and discharged abundance of pus, and in a fit of coughing air sometimes passed through it. There was hectic fever and great wasting, but the man gradually recovered. In a case mentioned by Dr. Ayton Douglas, a tumour appeared in the same circumstances under the left scapula, which, during violent fits of coughing, was sometimes distended to the size of a quart bottle, and suddenly diminished again. The man had cough, with copious expectoration, which was purulent and fetid. The tumour subsided gradually, and disappeared after two years, and the man recovered.*

In the diagnosis betwixt this disease and phthisis, we must be chiefly regulated by the acute fixed pain, referred to a particular spot. But it must be confessed that the diagnosis is sometimes difficult, and must depend more upon minute attention to the history and phenomena of the case, than upon any particular symptom. When it assumes considerable activity, the diagnosis will be the easier; but as the pulse is often little affected, there is danger of mistaking the pain for a muscular affection, and thus allowing the period to go by, when it may be treated successfully. It is only in its early stage that it is the subject of active practice; in the advanced stages it is probably irremediable. The remedies are few and simple. General bleeding is often required; large and repeated topical bleeding, blistering, issues, rest, and cool spare diet, are the leading articles, with the aid of antimonials, opiates, &c. If the dangerous nature of the disease be overlooked at the commencement, and the case be injudiciously treated by tonics and exercise, the error is likely to be fatal. A young lady, mentioned by Dr. Rush, had pain in the right side, with frequent chills and feverish paroxysms. She recovered by repeated small bleedings. Next summer she was seized with the same symptoms, but put herself under the care of another physician, who recommended country air and exercise. Under this plan she got gradually worse; in autumn was confined to bed; and continued during the winter affected with constant pain in the right side, with inability to lie upon it, and died in May. A remarkable circumstance in the case was, that she had neither cough nor frequency of pulse, until a month before her death. On dissection the left lung was sound, the right adhered extensively; and in separating the adhesions, a sac was discovered containing half a pint of matter.† In some of the cases, the paracentesis thoracis would afford the only chance of relief, but the remedy is very precarious, and the relief at best might be but temporary.*

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* Edin Medical Essays, Vol. VI. p. 127.

† Rush's Medical Inquiries, Vol. II. p. 112.

Sect. VI.—*Disease in the Posterior Mediastinum, and of the Glands connected with the Lungs.*

These affections deserve to be shortly referred to in connection with this inquiry, though they are of much inferior importance in a practical point of view, to the diseases mentioned in the preceding sections. They produce dry cough, with some uneasiness in breathing, and various anomalous symptoms; sometimes pain, referred to the back, so fixed and severe, that it is apt to be mistaken for disease of the spine. A girl, mentioned by Bayle, had dry cough, with wasting, and afterwards severe diarrhœa; she died at last of a short pneumonic attack. There was ulceration of the mucous membrane of the bowels. The lungs were sound, except the appearances of recent inflammation. The only other disease in the thorax was enlargement of the glands at the root of the lungs. In another case by the same writer, there was suppuration in the anterior mediastinum, complicated with disease of the lungs. In a case by Laennec, there was a cyst full of hydatids compressing the lung; and in one by Avenbrugger, there was a solid organized mass behind the left lung. In a case by Bayle, in which the lungs were extensively tubercular, there was also a tubercular mass behind the lungs, and in contact with the vertebræ, several of which were carious from the pressure. I have seen, in a case to be mentioned afterwards, an extensive abscess in the posterior mediastinum, with caries of the vertebræ; but it also was complicated with disease of the lungs. In the first volume of the Medical Communications, a singular case is mentioned, in which ulceration of the lungs had passed backwards, and formed a communication with the œsophagus. I saw lately a man, aged 58, who had a mass of diseased glands on his neck, pain under the sternum, difficult breathing, and an acute pain referred to a small spot about the middle of the spine. After three months he had attacks of headach, with loss of speech, which at first occurred once in two or three days, and continued about fifteen minutes; afterwards they occurred every day, and continued longer; the longest was six hours. He had then double vision and numbness of the right arm. His breathing became more difficult, so that he often could not lie down, and he died suddenly in a fit of suffocation, about three weeks after the appearance of the head symptoms. The lungs were loaded with fluid, but otherwise sound. A chain of diseased glands passed down from the glandular mass on the neck, behind the trachæa and the lungs; the largest were behind the division of the bronchiæ. In the anterior part of the right hemisphere of the brain, there was a tumour the size of a nut, of a reddish brown colour and very firm. No other morbid appearance.

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* See an important case by Dr. Henderson, in the last number of this Journal, with most interesting remarks by Dr. Hennen.

SECT. VII.—*Ulceration of the Lungs, of a healthy character, from Active Inflammation.*

Active inflammation in lungs otherwise healthy, frequently terminates by the formation of an abscess in the substance of the lung. The abscess, in such cases, is distinctly circumscribed, and the matter is contained in a soft sac of coagulable lymph. The pulmonic substance around the abscess is, in some cases, hepatised, in others quite healthy. Such an abscess may burst into the bronchiæ or into the cavity of the pleura, and, in either case, if the collection be extensive, it may be speedily fatal. But it may also be spit up, and has frequently been so, to the extent of lb. i. or more, in a very short time after the first bursting. There is thus left a cavity like that of any other abscess, which may then take on a healthy action, and gradually heal. In this case, cough continues, with purulent expectoration, for a longer or shorter time, according to the circumstances of the case, but the expectoration gradually diminishes in quantity, and at last disappears, the cough also ceasing along with it. The healing of such an abscess may be retarded by a variety of causes, and if the disease has been extensive, or the strength of the patient much reduced, he may sink under it, with all the usual symptoms of consumption. But it is a disease quite distinct from consumption, and one which, in a great proportion of cases, we may hope will terminate in recovery. I shall afterwards have occasion to refer to this subject, and to investigate, by examples, the difference betwixt this affection and the unhealthy ulceration which constitutes consumption.

SECT. VIII.—*Hœmoptysis and its Consequences.*

Facts and minute observations are wanting on this important subject, but, from the whole phenomena of the disease, it is probable that hæmoptysis ought to be viewed under several aspects, differing considerably from each other.

I. In such an organ as the lungs, in a great measure composed of vessels, it is not wonderful that derangements of circulation should take place, and that a vessel should occasionally give way. This may occur from general plethora, from occasional changes in the general circulation, as in women from suppression of the menses; and it may arise from causes affecting more immediately the lungs themselves. The most obvious and intelligible of these is, any obstruction to the return of the blood from the lungs to the left side of the heart. Such an obstruction existing while the full quantity is sent into the lungs from the right ventricle, a state of the lungs takes place, in some degree analagous to that of the brain in simple apoplexy, and we readily conceive how a branch should give way. The principal causes of this condition are diseases of the left side of the heart, and induration of a part of the lungs. Whatever other causes give rise to it, may prove causes of hæmoptysis, but in these there is considerable obscurity. We call it congestion, but this merely expresses the fact, without explaining any thing; the question immediately recurs, Whence this congestion, except from the organic causes referred to? It seems to proceed from a certain inflammatory state of the substance of the lungs. Hence arises the genuine acute hæmoptysis, which is nearly allied to peripneumonia, and requires the same treatment in the most decided manner. Under this treatment we expect it to terminate favourably, in a great proportion of cases. The breach of continuity which has taken place is equivalent to a wound; this may either heal, or may advance to suppuration, and produce purulent expectoration. If this take place in lungs otherwise sound, it may terminate favourably, like the healthy ulceration already referred to; if it take place in unsound lungs, the ulceration will be unhealthy, and will probably lead to consumption.

II. There seems to be a modification of hæmoptysis, differing materially from the former, though assuming an active form, in which the hæmorrhage is from the vessels of the bronchial membrane. It appears to be preceded and attended by less dyspnœa and oppression of the thorax than the former, and rather by rawness and tenderness, with a sharp irritating cough, having the characters of the catarrhal or bronchial inflammation, as the former has of the peripneumonic. The blood is generally in smaller quantity, and mixed with frothy fluid in the early stages; afterwards with the expectoration proper to the inflammation of the bronchial membrane. In several of the cases formerly described, we have seen it combined with the disease of the bronchial membrane; and a case, described by Portal, fixes still more distinctly the existence of this source of the hæmorrhage, without connexion with any disease of the lungs. A young man was liable to attacks of hæmoptysis, which occurred generally several times every month. After this had continued for two years, he died of an affection of the brain. The lungs were found perfectly sound; some of the bronchial glands were much enlarged, and covered with blood-vessels. Some of these vessels were distinctly traced terminating by open extremities on the surface of the bronchial membrane, and appeared evidently to have been the source of the hæmorrhage. This bronchial hæmoptysis is nearly allied to, and perhaps usually accompanied by, the inflammation of the bronchial membrane, and may be followed by the symptoms of that affection in its chronic state, with puriform expectoration, and many of the appearances of consumption. But it is an affection quite distinct from consumption, and affording a much more favourable prognosis.

III. The two former affections are more or less acute diseases. There seems to be a third modification of hæmoptysis, which is not in any degree acute. It appears to arise from the immediate rupture of a vessel, in consequence of disease of its coats, without the peripneumonic congestion of the first species, or the bronchial disease of the second. The patients are generally pale, feeble, and scrofulous-looking and the pulse weak and slow. It may probably arise either from the pulmonary vessels, or from the bronchial membrane, and, in both cases, seems to be connected with tubercular disease. In the former case, therefore, it is very likely to be followed by consumption; in the latter, by the chronic disease of the bronchial membrane in its most unfavourable form.

IV. A fourth modification arises from a vessel giving way from previous ulceration in a case of true consumption. It is distinguished by being preceded by purulent expectoration. It is often immediately fatal, and at best admits only of palliative treatment.

To the various affections resembling consumption, which have been referred to, we ought, perhaps, to add some remarkable cases, in which similar symptoms were kept up by extraneous substances lodging in the bronchiæ. A man, mentioned by Mr. Howship, had violent cough, with copious expectoration, and frequent hæmoptysis; constant fixed pain in the right side of the thorax, and extreme emaciation After four months, when his case was considered as hopeless, he brought up, in a violent fit of coughing, a small nail, 7-8 of an inch in length. Eleven or twelve years have elapsed since this event, during which he has enjoyed tolerable health, though liable at times to cough and hæmoptysis. He was sensible of the nail slipping down his throat, while he held it in his mouth when at work, immediately before the commencement of his illness.* A man, mentioned by Mr. Arnot, after suffering severely from cough and dyspnœa for more than a month, brought up a spongy piece of bone, the size of a hazel-nut, and got well speedily.† In the London Medical Journal for 1786, Mr. Holman mentions a man who had severe cough, purulent expectoration, mixed with blood, hectic fever, profuse night-sweats, and diarrhœa. After these symptoms had continued till he was reduced to a state resembling the last stage of consumption, he one day spit up a pint of blood, and soon after coughed up a piece of bone, measuring 6-8 of an inch in length, and weighing six grains. His alarming symptoms ceased almost immediately, and he was soon in perfect health. He remembered having swallowed a piece of bone fifteen years before, which stuck in his throat, and was pushed down by a probang. From that time he had been subject to cough, which had gradually increased. A woman, mentioned by Bartholinus, brought up, under similar circumstances, a small kernel of a nut, and got well immediately. The German translator of Portal mentions a woman, who, after being considered as phthisical for some time, brought up, in a violent fit of coughing, a stony concretion, half an inch long, and soon after got well. In several cases referred to by Laennec, hydatids were expectorated, with relief of pectoral symptoms of some standing; and Borelli mentions a gentleman, who recovered from a state of extreme danger, by coughing up a small piece of nutmeg, which had slipped into the larynx, and had been the cause of complaints, which were considered as consumptive.

These observations, on *diseases resembling consumption*, I submit as a slight and imperfect outline of a most extensive subject, in the hope that they may serve to show the importance of it, and to direct to it the attention of those better qualified, both to correct the outline, and to fill up the details. The whole is at present in the most rude and imperfect state, and that most important branch of it, the diagnosis, is entirely in its infancy. But it is one of the most interesting subjects that can occupy the attention of the British practitioner, and his utmost exertions will be amply rewarded, if any degree of precision can be introduced into the pathology of consumption. At present, it is certainly vague and unsatisfactory in the greatest degree, while, in the British Islands alone, the annual mortality from consumptive diseases is from fifty-five to sixty thousand.

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* Howship's Obs. in Surgery and Morbid Anatomy, p. 222.

Edinburgh Med. Essays, Vol. VI. p. 116.

SELECTED REVIEWS.

Exposition of the Doctrine of M. BROUSSAIS

[CONCLUDED.]

[From the London Medical and Physical Journal, of February, 1820.]

Before we proceed to the particular application of the facts detailed in the preceding article, it may be proper to repeat some remarks made in it, relating to the different consequences resulting from the same causes in different individuals; as they tend to explain several difficulties in the history of some diseases that have led pathologists to suppose the existence of some latent vice to which they owe their immediate origin. It is the superiority of the development of the nervous and sanguiferous systems, which, according to M. Broussais, disposes certain persons to the neuroses, to acute inflammations, and to hæmorrhages; whilst an analogous constitutional disposition, but in which the lymphatic system enjoys a remarkable predominance of action, is the organic condition which renders other persons so readily liable to morbid enlargement of the lymphatic glands, and the degeneration of structure which we have already particularly described. There are many persons who are remarkable for the little energy with which the circulation is effected in them: these are all disposed to irritations of the lymphatic vessels and ganglions, and to those degenerescences of structure which have been termed organic lesions; whilst the same causes to which they owe their origin, will, in persons whose circulation is carried on with greater vigour, give rise to violent phlegmasiæ. Those degenerescences have been shown to bear a near analogy to each other: nearly the whole of them have been observed in almost every part of the animal economy; but they, or the symptoms resulting from them, have received different names from nosologists, according as they may have their seat in particular organs. There is this analogy especially between tubercular phthisis, scrofula, and the affection causing tabes mesenterica.

The causes of enlargement of the lymphatic glands all act, either by irritating the glands themselves, or by exciting the surfaces on which the extremities of the absorbent vessels communicating with them terminate. The former is the less frequent, and cannot indeed exert its influence on the glands contained in the great cavities of the body: but the latter is very frequent, and is, as we shall presently show, according to M. Broussais, the general causes of phthisis. Inflammation of any organ produces enlargement of the glands whose vessels originate from the inflamed part; and, if the excitement thus effected becomes chronic, the glands remain enlarged, they pass to the tuberculous state, and, at length, the same degenerescence takes place, from the laws of association so remarkable between the tissues of the same structure and properties, in the glands of other parts of the body, so as to produce a diathesis analogous to the scrofulous. It has been denied that lymphatic glands, that have become swelled from sympathy ever become tuberculous; but M. Broussais asserts, that he has witnessed it in the exterior parts of the body in the most indubitable manner: and thence it is that inflammation of the mucous membrane of the lungs is a very frequent, and indeed almost the exclusive, cause of tubercular phthisis. The same origin applies to tabes mesenterica. The signs of irritation of the stomach and bowels, which are evident throughout its whole duration; the causes which determine it; the results of the examination of dead bodies; the good effects of abstinence from food, of cooling drinks and of revulsies, conjoin to prove, says M. Broussais, that tabes mesenterica is nothing else than irritation of the mucous membrane of the gastric canal, especially of the small intestines. (The enlarged glands, it is said in the Lectures, correspond especially to the parts of the intestine in which the inflammation had been most severe.) This irritation, which is similar to that in gastro enteritis in general, produces with more facility that enlargement of the mesenteric glands in children, because those organs are in them much developed, and enjoy a greater relative degree of vital energy than at any other period of life.

We return to the consideration of phthisis in a more particular manner. M. Broussais has shown that this affection is the almost inevitable consequence of prolonged irritation of the mucous membrane of the lungs in lymphatic subjects; and he adduces the most powerful evidence to show that this is its almost exclusive origin. During the twelve years that he accompanied the French army through the principal countries on the continent of Europe, he had frequent occasion to witness the confirmation of the above statement, and, at the same time, of determining the influence of a cold and moist climate in its production.

When I arrived at the army in Holland, he says, I found phthisis so frequent there, that, whenever a catarrh, accidentally arising from cold, was prolonged in a fair, slender, and lymphatic subject, it was necessary, in a manner, to despair of his recovery. On opening these patients, the lungs were found studded with tubercles and granulations. M. Broussais then suspected, that, if those patients had lived in a warmer climate, and not contracted the inflammation which marked the origin of the disease, they would not have fallen victims to phthisis; and that, if men of the same constitution, who were not yet affected with any disease, continued to be exposed to cold, they might, in contracting pulmonary inflammation, have the fate of their comrades; whilst, if they passed into a warm climate, they would escape that fatal disease. This supposition became realized; the army was transported into Italy; phthisis then became scarce, exactly in proportion to catarrh and pneumonia. Here, and afterwards in the south of Spain, M. Broussais opened a great number of the bodies of subjects of the constitution termed phthisical, who had died of other affections; and he never found tubercles in the lungs, except in a very few instances, where that organ had been irritated for a long time before death; that is to say, when the patients had suffered as they would have done in a colder country. These statements furnish powerful arguments against the opinions of those who suppose the tubercles to be the exciting cause of the inflammation; especially with the additional one, that after twelve years experience, M. Broussais says he saw but very few men fall into phthisis, who had not, even under his own observation, been affected with prolonged catarrhs, or peripneumonia.

The various appearances offered by the tuberculous and other degenerescences described in the preceding article, are commonly witnessed in the lungs, and not unfrequently at the same time;—a circumstance arising from their complex structure, into which nearly all the elementary tissues of the body enter. It is hardly necessary to remark, that the same irritative cause will produce different effects in each of those tissues, from the difference in their structure, and from its longer or shorter duration. Thus, we sometimes find in the lungs, indurations, some of a white, others of a yellowish colour, in masses more or less considerable in size, and presenting appearances more or less analogous with what is termed schirrous and tuberculous matter; in the midst of which, calculous and osseous concretions have been observed. In other subjects, there is a confused mass of black, grey, and yellowish spots, forming so many globules, some of them hard, and others friable: the fluid they have contained has shown the same varieties of character, being sometimes purulent, sometimes sanious, at others reddish and cream-like, &c. Ulcers, and bands of cellular tissue, traversing the lungs in various directions, are other varieties of organic lesion here observed. M. Broussais has not been able to determine precisely the causes of those varieties, which have furnished nosologists with the bases for so many distinct species of the disease. Some of the more strongly-marked characters may, however, be probably referred to the following laws: 1°. Active inflammation, affecting chiefly the sanguiferous vessels, will make the carnification of the lungs prevail; but this may not be the only alteration of structure, if the organs have been long in a state of irritation. 2°. A general disposition to irritation of the lymphatics, proved by other affections entirely of this nature, will lead to a predominant tuberculous disorganization. 3°. There will also be an affection of the same organs, happening as a consequence of irritation of the lymphatics of the cellular texture, which constitutes schirrus, when those irritations have existed for a long time in some external organ.

The scrofulous diathesis is, according to M. Broussais, merely the lymphatic constitution carried to the highest degree, which may be transmitted from parents to their children, just as the sanguineous and nervous temperaments may be so transferred; but scrofula cannot thence be said to be a latent disease in persons of that constitution, any more than pleurisy, or hepatitis, or other acute inflammatory affection, to which those of the sanguineous temperament are so especially liable, can be said to exist in these as constitutional diseases. This is reducing what is called the *scrofulous habit* to its true character.

In the treatment of *scrofula*, the first indication which presents itself, when the patient only shows a disposition to that malady, is to combat this disposition by hygienic measures. We cannot then act immediately on the lymphatic system to diminish its action, we must, therefore, endeavour to establish a more near equilibrium, by giving to the sanguineous system an energy which may remove the relative preponderance of the lymphatic vessels. This may be attempted by moderate exercises, especially in the open air, generous diet, wine, &c.: but, in giving this impulse to the system, it will be necessary to avert carefully all causes of more especially local irritation; the susceptibility of the stomach to excitation must be well attended to, and cold and humidity avoided. When the glands on the exterior parts of the body are tumefied, the same means may be persisted in; because this irritation very frequently arises from external causes, especially change of temperature, or from some part of the absorbent system being irritated in the manner, and with the results described on a former occasion. But this is not the case with the glands of the lungs and mesentery: here, according to M. Broussais, it is irritation of the mucous surfaces on which the vessels communicating with them open, which has been the origin of the affection of the glands. Here it is the inflammation of the membranous surfaces that requires our principal care in the first instance; but, in proportion as that inflammation subsides, the treatment of the enlargement of the glands that may be suspected to remain, should approximate to the mode already indicated for scrofula, when affecting the lymphatics of the exterior parts of the body. But this new indication, which appears only second in order in inflammatory phthisis, the causes of which are most evident, becomes primitive and fundamental in those where the phlogosis is developed only consecutively to the lymphatic disorder. The basis of the treatment, according to the former indication, should be placed on the therapeutics for catarrh, peripneumonia, and pleurisy; and, if the inflammation assumes a chronic form, it will be necessary to avoid the occasional causes, as cold and humid air, or any other irritating cause depending on the habits of life of the patient. The measures, speaking generally, are blood-letting, in the first instance, with restricted diet, and other analogous sedative measures; then revulsies; and, at length, a recourse to means proper to balance the vitality between the sanguiferous and lymphatic systems. These measures will require modification, according to the particular forms of disease under which the irritation of the lymphatics has its origin: 1° When *pneumonia* is the cause, the antiphlogistic measures should be directly debilitant. Free blood-letting will be necessary. The revulsies appropriate to it, are those which evacuate distant vessels without irritating them. The regimen must be very restricted.

2°. The *catarrhal phthisis* requires a combination of antiphlogistics, sedatives, and revulsies, restricted diet in the first instance, then nourishing without being stimulant. In the first instance, the action of the sanguiferous system should be moderated by general or local bleeding, according to particular circumstances; cooling drinks, and abstinence from food; cutaneous transpiration should be favoured by the pediluvium, during the violence of the erethism; and, when this diminishes, by vesicatories and rubefacients. As soon as white and thick expectoration announces a resolution of the inflammation, tonics may be combined with emollients, the patient may be permitted to take food, and gradually to return to his ordinary mode of life. When patients have previously been in a state of great exhaustion, the resolutive expectoration either does not take place, or it is too far prolonged. Thus, the chronic state appears under two forms: 1°, with dry cough, or but a little occasional spitting of transparent mucus; 2°, with abundant expectoration of thick and opaque matter. The patient's diet should here be nourishing, and wine and other tonics directed; only observing that he eats but little towards the evening, lest some febrile exacerbation should be then induced. A weak decoction of cinchona, combined with mucilages, has appeared to M. Broussais to be the most proper medicine.

3°. *Pleuritic phthisis* does not, unless the patient be plethoric, require the opening of the large veins, like the pneumonic: cupping, and the application of leeches, are more appropriate, followed by the tepid bath, emollient applications over the chest, to encourage the oozing of blood after the leeches have been removed; and slightly diaphoretic drinks. Vesicatories, until there are evident signs of alleviation, M. Broussais considers, are not advisable; principally because they often lead the practitioner to suppose that the inflammation is removed, when it exists with its original violence. In many cases, he found the pain in the chest disappear on the production of a blister externally, and yet the patients have died after a few days. Dissection showed that the inflammation had persisted with its original intensity, although the pain, considered so constant a symptom of it, had been totally removed. The diet should be aqueous, or vegetable; and the treatment indicated be continued until the most complete reestablishment of the functions: there is nothing else can attest that the inflammation of the membrane is entirely removed. From a want of due attention to this, many patients have fallen into consumption; the slight uneasiness about the chest being considered only as an indolent consequence of the previous inflammation, when it has really arisen from a less intense degree of that disorder. The utmost quiet of body, the avoiding of cold air, the use of tepid baths, and of flannel worn next the skin, with antiphlogistics adapted to the degree of the complaint, must be directed. It is this class of medicines which generally are the most efficacious against the cough that may remain; but, when this appears to be kept up by an irritation of the mucous membrane of the larynx and bronchiæ, and is not calmed by the measures indicated, the use of opium remains: "it is always the best resource against those irritations of the chest which refuse to give way to antiphlogistics, and which are exasperated by irritatant revulsies."

4°. The *phthisis dependant on the profession and habits of life*, requires the avoidance of the exciting causes, and the application of the foregoing measures, adapted to the particular circumstances of the individual case.

5°. *Phthisis consequent on continued fevers*, or, rather, the irritations of the lungs which succeed to those diseases, and which, by their obstinacy, lead to a fear of the formation of tubercles, requires some distinction in its treatment: 1°, if the inflammation is vehement, and the patient but little exhausted, the most rigorous antiphlogistic regimen, especially almost total abstinence from food, although it may be urgently called for by the appetite; besides this, revulsive measures proportionate to the excitability of the subject: 2°, if the fever has produced much debility, if the inflammation be languid, obscure, or if an abundant expectoration exists, sudorifics and revulsive irritants are well indicated; observing, however, that any febrile action that may remain be not augmented by them. The effects of those means should be confined to the secretory, or excretory, capillary vessels; the actions of which we wish to augment, in order to destroy the disposition which directs the fluids towards the lungs. In some cases of this kind, it has, however, been more advantageous to introduce into the stomach some astringent tonic, the effects of which are opposite to those of the foregoing agents,—such as cinchona. Morton relates instances of surprising cures effected by this bark, in obstinate coughs with hectic fever, and very abundant expectoration indicating suppuration. This success has also been obtained by many other practitioners, and by M. Broussais. The cases in which this remedy is appropriate, may be thus generalized: (*a*) those consequent on diseases which have produced considerable debility in a short time,—as typhous fevers, excessive hæmorrhages, &c.; (*b*) when the patient is of a lax, feeble, lymphatic, temperament, and the stomach rather indolent; (*c*) in persons living in cold and humid countries, and in large and populous cities, rather than in warm latitudes, exposed situations, and villages.

6°. *Scorbutic phthisis*, or chronic irritation of the lungs modified by the scorbutic diathesis, will require being treated according to the indications for the cure of the latter affection, which will be hereafter considered.

7°. Irritation of the lungs tending to the production of phthisis, provoked by suppressed cutaneous affections, hæmorrhages, and inflammations, should generally be combatted by the antiphlogistic regimen, aided by other measures adapted to the particular indications of the individual case.

The irritation of the mucous membrane of the intestinal canal, tending to the production of tabes mesenterica, must be treated according to the principles already developed in some of the preceding articles.

The inflammations which appear in subjects affected with scrofula, are produced by the same causes, and should be treated after the same principles, as those occurring in persons in general; only bearing in mind the disposition to activity of the lymphatic vessels, and relative want of vigour of the sanguiferous system, which should lead to a more reserved use of active antiphlogistics than in persons of the opposite disposition, and to the employment of revulsives as soon as the subsidence of the more severe degree of the inflammation will permit. It is an error to suppose, because tonics tend to remove the disposition to scrofula, that they are appropriate for the treatment of irritation of the sanguiferous system which may accompany, or be consequent on, the existence of that disposition.

In a former part of this exposition (vol. xli. p. 243,) we stated that "when the nutritive materials are insufficient in quantity, or are to a certain degree improper for nutrition, the animal economy falls into a state of debility, which often proceeds to actual disease;" that "other agents, such as cold and humid air, painful moral affections, &c. frequently debilitate the system, without producing previous irritation;" and that "the continued use of innutritious excitants will produce local irritation, at the same time that they influence the rest of the system in the manner just indicated." These principles point out the origin and nature of scurvy. Thus, it is observed as a consequence of the long-continued use of salted, smoked, and dried, aliments, as the principal food, whatever may be the qualities of the air, water, and other circumstances, surrounding the patients of that disease. Those materials, so ill appropriate for the alimentation of the body, although at first only leading to a decomposition of our organs from want of nutrition, do not always confine their effects to this; they often produce an irritation of the whole lining of the alimentary canal that passes at length to inflammation and disorganization; and at length the same effects ensue in the serous membranes, in the muscles, in the articular capsules, and even in the extremities of the spongy bones. Thus, we find in the dead bodies of scorbutic patients, phlegmasiæ of all species, with morbid adhesions, sanguineous and serous effusions, depositions of matter and gangrene in the parenchyma of the liver and lungs; the cavities of the joints filled with fluids of different kinds, and their capsules thickened and disorganized; the cartilages and heads of the bones carious and friable, the epiphyses separated and floating in sanious fluids; the muscles not only gorged with blood, hard, and infiltrated, but even reduced to a sort of clotted, half-putrid, mass, sometimes exactly filling their aponeurotic sheaths; sometimes the muscular layers are shrivelled, and contain pus similar to that of phlegmonous abscesses. But, in the midst of all these disorganizations, the brain and rest of the nervous system appear to be unaffected. This, as we shall presently show, will explain one very remarkable circumstance characteristic of this disease. Let us first trace the general progress of the phenomena by which it is constituted. The species of food which we stated to give rise to scurvy, fails, in the first instance, to supply to the blood the necessary quantity of nutritious materials: the muscles, which, in the healthy state of that fluid, appropriate to themselves the fibrine it contains, no longer obtaining from it the substance necessary for their action, experience the first effects in this disease. Their contractile power is gradually weakened, and is at length totally lost: thence the langour of the patients, the extreme fatigue they suffer from the slightest movements, and at last their absolute impossibility to move their limbs. The heart participates in this debility of the exterior muscles: it no longer propels the blood with any considerable force through the arteries; that fluid stagnates in its cavities, in the large veins, and successively in all parts of the body. The weakness of the heart is so great in some cases, that it becomes distended by the blood with which it is surcharged, and is found in the dead body dilated to a very considerable extent: and, even in those patients who recover, it remains particularly liable to aneurismal dilation. Absorption is then necessarily obstructed; collections of serous fluids take place in the extremities, and in the different visceral cavities. Thus, the first morbid effects in scurvy are of an organic nature, or, in other words, exist in the change in the properties of the solids; but a depraved state of the fluids soon ensues; the blood loses its proper constitution, and the secretory organs, languishing in their functions, give rise to an accumulation of effete matter in the vessels, which irritates the organs with which it is in contact, and produces at length the inflammations in the different parts which have been pointed out. It should be remembered, too, that the subjects are liable to have inflammation excited by all the common external causes of that affection, as well as by the peculiar internal ones that have just been designated.

"Represent to yourself," says M. Broussais, "the capillaries and the muscles of scorbutics in that state of weakness which depends on the want of adhesion between their molecules: what should be the result of the precipitated vibrations and of the engorgement which the phlegmasiæ determine in them with the more violence, because the nervous system, the only cause of organic movements, is perfectly healthy in this affection?—a very ready passage to gangrene, a rapid disorganization." The occurrence of such intense inflammation in patients affected with scurvy, has been brought forward as an argument in favour of the origin of inflammation from local debility,—that is, that debility of the vessels immediately give rise to it; but the above observations will show on what improper grounds. The hæmorrhages which take place in scurvy may, according to the opinion of M. Broussais, be of two species: the one similar to acute hæmorrhages in general, from irritation of the sanguineous capillaries; the other from disorganization of those vessels. The ecchymoses, as they generally appear, probably depend on the obstruction to the progress of the blood in the veins. Although it is stated in the foregoing account, that the alteration in the properties of the blood gives rise to inflammation of various parts in scurvy, yet this is by no means a frequent occurrence; and it is never witnessed except in very prolonged cases of the disease, except the patient makes use of alcoholic fluids, spices, or other powerfully irritating matters; and these probably effect the inflammation and disorganizations alluded to, by first producing irritation of the gastric organs, whence it is communicated to the rest of the system. We find persons suffer scurvy for several months, who use a sort of diet not calculated to produce irritation of the stomach, who have become reduced to the utmost state of debility, without those disorganizations taking place; but if, from any accidental cause, inflammation of the stomach is induced, they immediately follow, and terminate the life of the patient without delay: and dissection shows that the disorder may terminate fatally without the disorganizations resulting from inflammation having taken place. This explains how persons bear deprivation of food to a great extent, for a long period, without becoming affected with the phenomena characteristic of scurvy: to produce these, the aliment must possess more or less irritating qualities; and, in proportion to the degree of excitement of the gastric organs, will be the severity of the characters of this disease.

The nature of scurvy, then, according to the doctrine of M. Broussais, consists in, 1st. Alteration of the blood, in consequence of want of proper nutrition; 2d, irritation of the mucous membranes of the gastric organs; 3d, weakness, and at length the loss, of muscular contractility; 4th, obstruction to the circulation of the blood from debility of the heart; 5th, irritation more or less considerable of the sanguineous capillary vessels in all the organs, extravasation of blood, destruction of different parts; and, in the midst of this extensive disorder, integrity of the texture and functions of the nervous system.

The treatment of scurvy is so clearly pointed out by the foregoing theory, that it is not necessary to say much on this subject; it is the same, according to this doctrine, as that which all judicious physicians have stated to be most beneficial; fresh vegetables and acidulous fruits in the first instance, and then a more liberal supply of nutritious food. The above doctrine, however, furnishes an indication against the use of stimulants that has sometimes been deviated from; but always with injury when employed before the state of irritation of the stomach and small intestines has been removed. "What a lesson for the Brunonians does this disease afford, (exclaims M. Broussais,) who personify the results of our functions, and who have only two confused ideas, according to which they pretend to explain all the phenomena of the living body!"

MUCOUS MEMBRANE OF THE LUNGS.

1. *A Treatise on Inflammation of the Mucous Membrane of the Lungs; to which is prefixed an Experimental Inquiry respecting the Contractile Power of the Blood Vessels, and the Nature of Inflammation.* By Charles Hastings, M. D. Physician to the Worcester Infirmary, &c. One vol. 8vo, pp. 420. London, 1820.

2. *Histoire des Phlegmasies, ou Inflammations Chroniques, fondées sur de nouvelles Observations de Clinique, et d'Anatomie Pathologique.* Par F. J. V. Broussais, Docteur en Medicine, &c. &c. Two vols. 8vo, 1232 pages. Second Edition. Paris, 1816.

3. *Observations on the Inflammations of the Mucous Membranes of the Organs of Respiration.* By Thomas Alcock, Esq. Surgeon. (Medical Intelligencer, No. 7 & 8.)

4. *Dictionnaire des Sciences Medicales.* Tome 32, Article "*Membrane.*" Par L. R. Villerme, M. D.

5. *An Essay towards a Pathology of Eruptive Fevers. Delivered as a Gulstonian Lecture, before the Royal College of Physicians, London, in the year* 1820. By Richard Harrison, M. D. F. L. S. Fellow of the Royal College of Physicians, &c. &c. &c. London Med. and Phys. Journal, July 1820.

[From the London Medico-Chirurgical Review, for Dec. 1820.]

The current of medical investigation and curiosity has lately set, with considerable force, towards the pathology of the Mucous Membranes—more especially those which line the aerial passages. This current of attention may appear to be too strong, and too exclusively directed towards a single point; but we believe that medical science is not likely to be retarded, in the end, by such accidents. A certain degree of enthusiasm seems necessary to ensure success in all pursuits: and it would be bad policy to repress it in a profession like ours, where there exist already so many circumstances to chill the zeal, damp the ardour, and exhaust the patience of those who devote their time and talent to the investigation of diseases.

It is now thirty years since Theophilus Bordeu, of Montpellier, published a volume on the "*Tissu Muqueux, ou l'Organe Cellulaire, et sur quelques Maladies de la Poitrine;*" but we confess that an attentive perusal of this work has furnished us with little knowledge on the subject. M. Pinel appears to have been the first who drew order out of chaos respecting the different tissues of the body; and Bichat, seizing the idea, carried his investigations (as far as anatomy and physiology are concerned) to the utmost extent; for very little has been added to the researches of this powerful genius. A slight anatomico-physiological sketch of the tissue which forms the subject of this article is indispensable necessary towards a pothological delineation.

The mucous membrane which lines the air passages of the lungs, and the whole alimentary canal, from the mouth to the anus, is composed of three tissues or structures—the chorion, papillæ, and epidermis. This membrane forms a kind of internal skin, and is strikingly analagous to the cutaneous surface, in its organization, functions, and vital properties. The chorion of the mucous membrane, which gives form and substance to this tissue, is of a soft and spongy texture, which Bichat conceived to be very much modified by its own secretions, as well as those foreign substances which constantly come in contact with it. It is curious that all the mucous surfaces, especially those of the stomach, have the property of coagulating milk, as is commonly seen in the process of making rennet with the paunches of animals. The papillæ or villi of the mucous membrane are so numerous and minute, that they generally appear as a polished surface, yet their existence is unquestionably proved. They are of a pyramidal shape, and very various in size, in different parts of the mucous tissue. The free or internal surface of this membrane is covered with an epidermis, analagous to that of the skin, but very fine, insensible, and apparently for the purpose of defending the chorion and papillæ from the rude action of passing substances. Throughout the whole extent of the mucous membrane, and embedded in the chorion, are scattered innumerable glands, which secrete and pour out, by imperceptible orifices, a mucilaginous fluid, which lubricates their surface. These glands are very vascular, and doubtless are proportionally supplied with nerves. Whenever the mucous membrane is irritated the function of secretion is increased. The greatest degree of sensibility resides at the extremities of the mucous membranes, and any stimulus applied there excites the action of the mucous glands throughout the whole extent of tissue. This may account for many phenomena which we daily witness: thus the introduction of a suppository, or even a bougie into the rectum, will often excite the action of the whole intestinal tube. Bichat, instead of stimulating the cutaneous surface of a hemiphlegic patient, has, more than once, pursued the following plan. He introduced a sound into the urethra, and a bougie into each nostril, while a surgeon irritated, at intervals, the uvula. The patients appeared to be much more roused by these means than by blisters to the skin. "Would it not be better (says Bichat) to produce an artificial catarrh in the mucous membrane of the nostril corresponding with an inflamed eye, than apply a vesicatory externally?"

As the mucous membranes are constantly exposed to the contact of substances extraneous to those of the animal, we may perhaps consider one office of them to be that of interposing a limit or barrier between our organs and those heterogeneous bodies—in short, officiating as a skin to the internal viscera. These mucous surfaces, when they happen to protrude without the body, as for instance, in inversio uteri, appear to take on the nature of common skin, in a great degree. In the impunity with which they may be exposed to the air, they exhibit a striking contrast with the serous membranes of the body. Into the structure of the mucous membranes a vast number of blood-vessels, nerves, exhalents, and absorbents are crowded, and no tissue in the human frame is endued with a higher degree of excitability, or irritability. Each mucous membrane, however, is specifically excited by a specific substance—as that of the bladder by urine, that of the lungs by air, &c. But when their organic sensibility is disturbed by disease, even their proper fluids will occasion pain, as we every day witness.

When we contemplate the great extent of the mucous surfaces, their importance, even as emunctories, which separate their fluids from the blood, rises in our consideration. Any excess or deficiency in their functions must, and evidently does, derange the general health in a very powerful manner. But their extensive chain of sympathies with almost every structure in the body, especially the skin, deserves the utmost attention of the physician; for it is principally in this way that we can trace the immense range of their influence on distant functions and structures of the human frame. In a future number we shall investigate exclusively the mucous membrane of the digestive apparatus and then will be the proper time for taking up the subject of morbid sympathies. At present we confine our pathological researches and observations to the membrane lining the air passages.

Some physiologists believe that the mucous membrane of the lungs plays an important part in the change which is produced in the blood while passing through the pulmonary capillaries. The exhalation from the mucous tissue of the lungs is sufficiently obvious; but whether the fluid exhaled be merely aqueous, or whether any of the mucous fluid can be converted into vapour at the temperature of the human body, is doubtful. Indeed we are far from being assured that the fluids which lubricate the pulmonary surfaces in a state of health, are of that viscid nature which we observe them to be under other circumstances. It is, on the contrary, exceedingly probable that this viscidity prevents, in some measure, that change in the blood, usually effected by respiration, and, in many cases, goes far by its tenacity and accumulation to prevent that change entirely, and thus destroy life. In perfect health there appears to be no expectoration—the fluid secreted being completely exhaled or absorbed.

It is remarked by Bichat, that where the mucous membranes take their origins from the skin, and where their animal sensibility is most exquisite, they are there supplied with nerves from the cerebrum; as, for instance, the pituitary membrane, the conjunctiva, &c. while the deep-seated portions of the mucous membranes are supplied chiefly by the ganglia, as the intestines, excretory ducts, &c. Although, in health, the air and aliments produce no sensation in the mucous tissues to which they are applied, excepting at the origins of these tissues, as above observed, yet, when they are in a state of inflammation, the same substances produce much uneasiness; and in this state a great quantity of first watery and then viscid mucus, or even pus, is poured out, as we see in pulmonary and vesical catarrh, dysentery, &c. There can be no doubt that this increased secretion is the means which nature employs for the removal of the irritation or inflammation, in the same way that a watery fluid is poured out from the serous membranes, to relieve their vascular turgescence. Yet an excess in either of these processes is attended with great danger. "No sooner does the secretion into the air passages exceed that which can be removed by expectoration, than accumulation begins, and a part of the cells of the lungs, which should receive air, becomes filled with secreted fluid. This increasing must necessarily prevent the due performance of the function of respiration—that function without which life cannot exist. The blood no longer is changed from the dark or venous to the vermillion hue, and the colour of the body partakes of the leaden or livid shade;—if the accumulation proceed, respiration becomes more and more obstructed, the phlegm may be heard rattling in the air passages—and the patient sinks exhausted and suffocated."*

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* Alcock.

It is known to our readers that, in this country, Dr. Harrison, Dr. Hastings, Mr. Alcock, and a few others, have recently drawn the attention of the profession to the pathological affinity of certain eruptive and other diseases with inflammation of the mucous membranes. This affinity has, for some years, been observed, and fully acknowledged on the continent.

> " It is," says Villermé, " to irritation of the mucous membranes, particularly those of the digestive organs, that we are to attribute a great many of the cutaneous phlegmasiæ, hitherto regarded as idiopathic affections. The miliary eruption appears to be always symptomatic. We invariably find, in individual cases, and in the histories of epidemic miliary fevers, that all the symptoms of irritation in the mucous membranes preceded the cutaneous eruption, and coincided with it. On dissection too, the physician has always found unequivocal traces of irritation and violent inflammation of some mucous membrane, falsely regarded as the *effect*, but evidently the *cause* of the miliary eruption. It is equally certain that in measles the mucous membranes are primarily affected, and that, from their tissue the irritation is reflected on the cutaneous surface:—in short, that the measles is only an epiphenomenon or appendix of the internal irritation. La Rougiole n'est qu'un appendice de l'irritation interne."—*Dict. des Sciences Med. Tom.* 32, *p*. 218.

In our review of Dr. Clark's work, April, 1820, p. 587, we noticed the investigations of our continental brethren relative to the pathology of small pox. All those who died of this disease at the " Maison des Enfans" (and the mortality was great) were examined, and the appearances were inflammation and ulceration of the internal coat of the intestines; with pustular eruptions there, and on the surface of the peritoneum. In three cases a croupy false membrane was found lining the whole alimentary canal, from the œsophagus to the rectum. Mr. Alcock, whose dissections showed the mucous membrane of the lungs more frequently affected, in variola, than that of the digestive organs, suspects that the French physicians did not examine the air passages. We have reason to know, however, that they left no important part of the body unexplored. But the difference between the climate of England and France, together with the heating regimen which, for a time, was employed in the Maison des Enfans, will easily account for the mucous membrane of the lungs being the principal focus of disease in this country, while that of the digestive apparatus bore the onus of irritation in Paris.

Mr. Alcock, whose opportunities for prosecuting investigations of this kind are great, and whose originality of mind qualifies him for the task, observes that:

> In measles we trace the first appearances in the watery and suffused eyes—the discharge from the nostrils—the sneezing and other catarrh-

al symptoms, which show the inflammation of the mucous surfaces lining these parts: the inflammation extends inwards, and the throat becomes affected; as is evident, on inspection, and as might be inferred from the greater or less difficulty in swallowing. The sneezing is generally a mere precursory symptom, whilst the cough, which is at first generally slight, is often increased to a severe degree, showing the transition of the diseased action from one part of the mucous surface to another. In some cases these symptoms are much relieved on the appearance of the eruption, but in most of the severe forms of this disease it is otherwise, and the vulgar opinion that the greatest danger is to be apprehended as late as the decline of the eruption, or as is usually expressed *at the turn*, seems not without foundation. If the disease have proceeded thus far without appropriate treatment—if there be much dyspnœa, and the cough be frequent and severe—if the breathing, besides being oppressed, be much increased in frequency beyond the natural standard, the result is indeed much to be feared."—*Med. Intell. Vol. I. p.* 197.

Mr. Alcock thinks that, during the progress of measles, we may as certainly infer the state of the lining membrane of the lungs, by a careful inspection of the fauces and adjacent parts, as we may infer the state of the stomach from that of the tongue.

" Examinations of morbid appearances, after death, in cases of measles, have shown the lining membrane of the air passages in a highly vascular and inflamed state; the air passages themselves filled in so large a proportion with mucus, as to prevent the oxydation of the blood, and consequently to destroy life. In cases where the disease has been more protracted, the air passages have not been filled with mucus, but chiefly with pus, sometimes mixed with air and mucus, extending throughout the most minute ramifications of the bronchia, and rendering a great part of the lungs much more dense than in the natural state.—*Med. Intell. p.* 197.

The parenchymatous structure of the lungs did not appear to suffer much, in Mr. Alcock's experience; but he has known more than one instance where ulceration of the larynx had taken place. During the period of eruption he not unfrequently found the larynx and pharynx principally affected, while in the more advanced stages, the trachea, and still more frequently, the bronchia became the chief seat of disease. Mr. A. observes, that the greater number of these affections are acute, and require speedy and efficient means of relief; whereas, inflammations of the same tissues, unconnected with these eruptive complaints, often continue for a considerable time without danger. Mr. Alcock, throwing all idea of the specific nature of measles (and indeed of other eruptive diseases) out of the question, and viewing the malady simply as inflammation of the mucous membrane of the lungs, founds his treatment, first, on the controlling of the general excitement; and secondly, on subduing the local inflammation. The means of fulfilling these indications need not be stated to the readers of this journal.

In respect to small pox, as was observed above, Mr. Alcock found the aerial much more frequently affected than the alimentary passages; and he states it as a general fact "that the danger of small-pox has always been in the ratio of the laryngeal, tracheal, and bronchial inflammation, and that this inflammation has usually born a strict relation to the apthous eruptions which are to be found in the throat."* A reference therefore to the state of the throat, in the early days of the eruption, has proved an almost unerring guide to Mr. Alcock, in his future practice. "In nearly all cases of confluent small-pox, when seen thus early, a decidedly depletory and antiphlogistic system of treatment has conquered the disease, and saved the person's life."

> "So certainly has this treatment answered the intended purpose, that in many cases the disease has been cut short, the eruptions have run through their course more rapidly than under ordinary circumstances, the secondary fever, as it has been called, has not occurred, and the person's countenance has been left free from pits, or the marks have been comparatively slight." *Med. Intell. p.* 201.

Dr. Hastings, of Worcester, whose work will presently come into particular consideration, relates two cases of fatal variola, where the mucous membrane of the lungs was inflamed or ulcerated. In the first case, (p. 238) a child, three years of age, after exposure to the contagion of small-pox, became feverish on the 14th of November. On the 17th a red pimply eruption appeared on several parts of the body. On the 19th there was some difficulty of breathing, which next day, was increased, and he died the same evening. On dissection, the mucous membrane of the pharynx was found inflamed; while the trachea, bronchia, and air cells were quite filled with mucous and bloody serum. The membrane lining the trachea and bronchia was greatly inflamed; but the substance and pleural covering of the lungs were sound.

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* Very many years ago Reil came to nearly the same conclusions. "Sur quinze ouvertures de sujets qui avaient succombé a variole Reil a trouvé onze cas où les bronches étaient attaquées de phlegmasie, soit seules, soit conjointement avec le larynx, la trachée on le poumon ; et tantot elles contenaient un mucus de couleur pourpre foncée ou du sang aqueux, ou une matière epaisse, fètide et noirâtre ; tantot leur glandes étaient tres gonflées quelquefois ces tuyaux ne presentaient qu'une legere phlogose avec des taches rouges ; d'autres fois une fausse membrane plus on moins epaisse, blanchatre et tenace, recouvrait la tunique interne du tube aerien très inflammée." *Dict. des Sciences Med. Vol.* II. *p.* 130. We cannot lay claim to any great novelty in our mucological doctrines of the present day, after the passages quoted in this article are fairly considered.

The brother of the foregoing, six years of age, was seized with variola, which proved fatal on the 6th day, and without any very evident pectoral symptoms. He complained, however, of soreness of the throat, and some fits of dypnœa. On dissection, the pharynx and upper part of the glottis were found sphacelated. A quantity of bloody matter escaped from the trachea when incised. The mucous lining of the trachea and air-cells was much inflamed; and about the middle of the trachea there were several small ulcers. The bronchia and air-cells were completely full of a bloody fluid.

> "It is common," says Dr. Hastings, "if death happen at an early stage, before the vescicles are formed, to find the trachea full of fluid, and the mucous membrane of the lungs exceedingly red from the dilatation of its capillary vessels. The glottis too, and the upper part of the trachea, are sometimes highly vascular, and the inflammatory action often extends to the pharynx ; but neither the pleura nor the substance of the lungs appears inflamed. If the patient die at the later period of the disease, when the body is covered with pustules, ulcers are occasionally met with in the mucous membrane, corresponding in size with the pustules that are formed in the skin. The glottis and pharynx are still more affected than when the patient dies earlier, sphacelus of those parts occasionally occurring. The structure of the lungs is often entirely free from disease, and there are no adhesions. The lungs, however, do not collapse when the thorax is opened, and when cut into, a frothy matter escapes from them. The blood vessels of the lungs are always much loaded." 185.

Mr. Cross and Mr. Hull, of Norwich, have also stated some dissections after small pox, where an eruption of a variolous appearance was found on the inner surface of the stomach, as the reader will see in our last number, page 305.

In respect to hooping cough, little doubt is now entertained of its being a specific inflammation, more or less acute, of the pulmonary mucous membranes—especially that portion lining the larynx.

> "I have repeatedly ascertained," says Mr. Alcock, "by dissections of patients who have died of hooping cough, that the larynx invariably exhibited signs of inflammation often to so great an extent as by its swelling to close mechanically the glottis ; often the exudation of coagulated lymph near the larynx ; the mucous or lining membrane of the trachea and bronchia much increased in vascularity, and the cavities of the latter filled with fluid more or less mixed with air—the fluid varying from that of thin mucus to perfectly formed pus.
>
> "With these facts as a basis, is it unreasonable to suppose that the inflammation of the mucous membrane lining the various parts of the organs of respiration, should produce the tenacious mucus, which is

from time to time expectorated? that the accumulation of this matter impedes respiration, and acts as an extraneous body upon the larynx; that the cough is a mere natural effort to expel the offending matter, and its violence is in direct ratio with the tenacity of the phlegm secreted; as we often find that spontaneous vomiting frequently terminates the paroxysm, by bringing away the secretion adhering about the top of the larynx, and which the cough had not been sufficient to dislodge? This irritating cause being removed, there is soon a cessation of all the urgent symptoms until its accumulation, or other accidental cause, produces the recurrence of the paroxysm. If the disease be not subdued, either by natural means or by appropriate remedial treatment, the excessive secretion continues, accumulation takes place in the bronchia and in the air-cells of the lungs, and consequently the blood is prevented from that intimate contact with the air respired, which is so essential to life, that the continuance of this state terminates in suffocation."—*Med. Intell. p.* 202.

The treatment, Mr. Alcock observes, must not be confined to the mere alleviation of symptoms, but must, to be successful, strike at the cause. When the inflammatory affection appears to call for measures beyond those of regimen, temperature, &c. "depletion, active depletion must be used; and frequently the combination of blood-letting, both general and local, will afford more relief than either of them separately." These means will be greatly assisted by such remedies as tend to equalize the circulation; the distribution of blood being generally in excess in the internal organs, and deficient on the surface. The occasional exhibition of emetics is therefore useful, "and still more particularly such medicines as produce a copious mucous secretion from any large surface of the mucous membranes, as those of the stomach and intestines."

Dr. Richard Harrison, in a late Gulstonian Lecture before the college of physicians, subsequently published in the Medical and Physical Journal, has drawn the attention of his brethren to the connexion between the eruptive fevers, and inflammation of the mucous membranes. While ingeniously supporting this doctrine, however, he has gone a step beyond Broussais himself, by supposing "that it is irritation of *one organ solely* that will produce this effect, (fever) and that organ is the mucous membrane." This is denying the power of any other inflamed organ; as for instance, the brain, to produce symptomatic fever, until the disorder has reached the mucous membranes, when "derangement of certain functions of the body," hitherto denominated fever, becomes immediately developed. It is somewhat mortifying to human, and particularly to medical speculations, that two learned and ingenious physicians, in the present advanced æra of pathology, should, in the British capital, promulgate two theories respecting fever—one maintaining that it depended *always* on inflammation of the brain—the other, that it *never had* such a source. Our own observations do not lead us to coincide entirely with either Dr. Clutterbuck or Dr. Harrison. The etiology of fever is too various to admit an unvarying pathology of the disease. Truth would appear to lie between these exclusive extremes; for, granting that fever was always dependant on topical inflammation, that topical inflammation will not be found exclusively confined to a single organ or structure in the body.* Nevertheless the public are greatly indebted to those gentlemen who have endeavoured to assign fever a local habitation, since the doctrine points to by far the best practice in the majority of cases. If we could bring ourselves to the doctrine of an *exclusive seat* of fever, we should certainly be inclined to consider the mucous membranes as that seat, for it appears far more generally affected than any other tissue in the body; but we are not converts to the doctrine, notwithstanding the ingenuity and acuteness of its advocates.

As far as respects the eruptive fevers, however, we are strongly disposed to agree with Dr. Harrison and those other practitioners already alluded to, that the primary exciting cause, be it a specific contagious miasm, or certain unknown peculiarities of atmosphere, is first applied to the mucous membranes of the lungs and primæ viæ, and that in the said tissues we have the first indications of disordered function, during life, and very unequivocal vestiges of inflammation, on dissection.

> "In fact," says Dr. Hastings, "the membrane (in measles) is sometimes affected in patches nearly approaching to the figure of semi-circles, in the same manner as the skin is in that disease." 193.

Under such circumstances, and knowing as we do, how commonly a disordered state of the internal secretions will affect the skin, we may fairly conclude that the febrific miasms which occasion the eruptive fevers take the route above mentioned in their action on the human frame. But although we conceive that inflammation is the danger to be guarded against, and the point to be held in view, while treating the eruptive fevers; yet we cannot bring ourselves to agree entirely with those who would identify *this* inflammation, as far as treatment is concerned, with inflammation occurring under common circumstances, and independent of any eruptive disease. It is quite evident that in the exanthemata Nature expels the poison, or, at all events, produces a metastasis to the skin—and this she does not appear to attempt in *common* inflammations. Some little deference then, we conceive, is to be paid to Nature in this specific operation, and her work should not be rashly interfered with, until she appears to be going wrong. We find that, under common and favourable circumstances, Nature conquers the internal inflammation in her own way; we think therefore that it is only where the interior functions labour, and the internal structures are threatened with disorganizing inflammation, that we are to act as boldly as in the common phlegmasiæ of the internal organs. In the latter case, we are convinced that nothing but pure antiphlogistic measures can be effectual, and those put in force with vigour, not timidity.

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* Med. and Phys. Journal, July 1820, p. 17.

Having thus glanced at the pathology of the mucous membranes in the exanthemata, we shall proceed to that of the lungs, as more commonly and obviously affected under other circumstances.

The respiratory organ is more exposed to external impressions, especially of climate, than any other viscus in the body; and its lining or mucous membrane, which is the most sensible structure of this complicated apparatus, is evidently the first surface on which these impressions can be made. It is to be borne in mind that whatever raises the sensibility or irritability of the mucous membrane of the lungs (or indeed of any other tissue) beyond the natural standard, augments proportionally the vascular fulness of the part; and, on the other hand, whatever determines an overplus of blood to this membrane, elevates its sensibility beyond the healthy boundary. Now in variable climates particularly these oscillations in the circulation and excitement of the mucous membrane are almost hourly produced. All irritating substances diffused in the atmosphere and drawn into the lungs, excite the nerves of their lining membrane; and this excitement draws an afflux of blood to the part—while every considerable alternation of temperature in the air, impels from the surface of the body an increased quantum of blood to the interior organs generally, but especially to the mucous membrane of the lungs, accompanied, or quickly followed, by a corresponding afflux of sensibility. This is no imaginary doctrine. Common observation pointed it out among the snow-covered mountains of Styria, when the legions of Napoleon were overrunning the continent.

" Toutes les fois," says Broussais, " que la température de l'air ou de l'eau vient à diminuer autour de l'homme, qui, d'ordinaire, baigne dans ces fluides, la peau se refroidit, ses évacuations cutanées diminuent, le sang est en moindre quantité dans l'organe cutané, dans le tissu cellulaire et dans les membres; il abonde dans la muqueuse pulmonaire, ce qui est démontré par un sentiment de plénitude qu'on éprouve en inspirant, dans la poitrine; l'exhalation et la sécrétion muqueuse y sont augmentées. Si, après la cessation de la cause, l'équilibre n'est pas rétabli, l'homme a une irritation morbifique dans la membrane des bronches." *Tom. I. p.* 140.

In the various avocations of life there are numerous other auxillary causes in the production of these irregularities of the circulation and excitement in the pulmonary apparatus. Inordinate exertions of the body or of the voice continually strain the vessels of the lungs; and, where any predisposition exists, excite a tendency to inflammation or congestion. And this leads to inquire what are the symptoms of this inflammation? Are we to consider every excitement of the mucous membrane of the lungs, as evinced by an increased secretion from its glands, as inflammation? Or, would it not be more correct pathology to consider *irritation* as the first link or grade, which may or may not rise into actual inflammation of the mucous structure? Volatile alkali or snuff will excite a considerable secretion from the mucous membrane of the nares, and upper portions of the larynx and fauces, with sneezing or coughing; but are we justified in calling this inflammation? Fruit and various other ingesta will often so excite the mucous membrane of the bowels as to occasion a smart diarrhœa, but is this inflammation? We think the following sentence of Broussais is worth attending to:—

> " If this irritation exhibits no other indication of its existence than a disordered mucous secretion (un vice de la secretion muqueuse) it is called *catarrh;* but if it manifests itself by a violent disturbance of the circulation, joined to an alteration in the mucous secretion, we call it pulmonic inflammation.—*Tom. I. p.* 140.

This is probably all the distinction which we at present possess, between irritated function and inflamed structure. We are carefully to bear in mind, however, that inflammation almost invariably commences with irritation of function; and that irritation of function readily passes into inflammation or other disorder of structure.

We now come to the subject of Bronchitis, and here we take up the work of Dr. Charles Hastings, a gentleman whose zeal and talents will, we venture to prognosticate, do honour to the present æra of pathological investigation, and contribute greatly to the progress of the healing art.

Dr. Hastings has presented to the reader a concise yet clear exposition of what has been written on the subject of bronchial inflammation, previously to his own time, on nearly the same plan as Dr. Cooke has adopted on the subject of nervous diseases—a mode of proceeding in both cases, which we highly recommend to the attention of our brethren, as deserving their warmest patronage and support.

Dr. Hastings very properly divides bronchitis into two kinds, the acute and chronic, together with the varieties of each kind which present themselves in practice.

Symptomatology of Acute Bronchitis.

§ 1. Dr. Hastings considers catarrh as the lowest grade, or mildest form under which bronchial inflammation is observed. The symptoms of this affection are well known, as well as its salutary termination in a mild mucous expectoration, which relieves the turgescence of the vessels, and permits the membrane to regain its pristine integrity of function. It is not very uncommon, however, for highly inflammatory symptoms to supervene on catarrh, occasionally, or the disease to degenerate into an obstinate chronic affection, in delicate constitutions, and under mismanagement or neglect. The cough then becomes severe, the expectoration copious and puruloid if not purulent, the dyspnœa considerable, the pulse quick, while the patient emaciates and exhibits most of the phenomena of phthisis, which, if not checked, prove fatal.

On dissection, in such cases, according to Dr. Hastings, tubercles are generally found in the lungs, and the mucous membrane much diseased, viz. ulcerated, and the bronchia and air cells filled with purulent matter.

§ II. The second variety happens generally during sudden atmospherical vicissitudes, in old people and phlegmatic habits. The apparent mildness of the attack is fallacious; the febrile symptoms are not near so strongly marked as in pneumonia; there is little or no fixed pain in the chest, but only a sense of uneasiness and tightness; there is oppression at the præcordia, with anxiety in the countenance, lassitude over the body, quick and laborious respiration, wheezing, and, as the disease advances, a noisy breathing, from the accumulation of the secretions in the air cells and bronchia. Hoarseness is common; and the patient cannot breathe deeply without exciting cough, or increasing pain, if any existed. In the early period of the disease, the dyspnœa is not much aggravated by the recumbent posture; but as it advances, the respiration is freer in the erect position of the body. Dr. Badham remarks, that in some cases of asthenic bronchitis, there are periodical exacerbations of the dyspnœa, resembling transitory fits of asthma, with sudden constriction across the thorax, and momentary loss of voice. At the very beginning, there is often a dryness of the mucous membrane, the secretions being diminished; but cough is always present, and some expectoration usually attends the progress of the complaint. When a copious expectoration comes on of thick, viscid, opaque mucus, the violence of the cough is generally diminished. Vomiting not unfrequently is excited by the cough in bronchitis, and the discharge of dense white mucus, sometimes moulded into ramifications, usually relieves the bronchia for time. After violent paroxysms of coughing, the patient is often left breathless, with a sensation of tightness across the chest. Great pain across the forehead generally accompanies the cough—often vertigo and drowsiness. The tongue and stomach are deranged, and there is thirst. At the very beginning the circulation is not much disturbed; but in the progress of the disease, the fulness and hardness of the pulse are perceptible. The temperature of the body is not, in general, much increased, though the cheeks are often flushed, with evening paroxysms of heat and restlessness. The surface is dry, unless when acted on by diaphoretics, and blood drawn usually shows the buffy coat. The duration of this species of bronchitis is very uncertain.

> " In some cases," says Dr. Hastings, "it terminates in a few days, whilst in others it runs on to a much longer period. In the more violent examples, when the remedies employed do not check the progress of the symptoms, the pulse towards the seventh or eighth day becomes very quick and much weaker; occasional perspirations break out, the nails and lips assume a slightly livid hue, and the countenance is distressed, anxious, and pallid, with somewhat of a purple tinge. In fact, every symptom bespeaks obstruction in the air passages. Soon after the extremities grow cold, and the patient dies from suffocation." 163.

In less dangerous cases the more distressing symptoms begin to subside in six or seven days, with a copious, bland expectoration, which generally continues for some time, and prevents the patient from recovering his health for several weeks. In this state unfavourable weather may fix a chronic and obstinate affection of the mucous membrane, which occasionally destroys the patient with all the symptoms of phthisis, but without disorganization of the parenchymatous structure of the lungs, as will be shown hereafter. Hydrothorax is not a very unfrequent termination of this complaint when long protracted.

§ III. Hitherto our judicious author has been considering the disease as of a comparatively mild, catarrhal nature, or in old and phlegmatic subjects, where the pyrexia does not run high, and the disease is not very rapid in its course. But when the subject is strong and plethoric, the symptoms assume a tone of great severity. While the pulse, tongue, and surface indicate violent reaction, the countenance is often pallid. Even here there is rarely any fixed pain, but only a distressing tightness in the chest. The breathing is laborious, and only mitigated by the erect posture. The dyspnœa is far greater than the cough. There is some expectoration; a failure of which is a most unfavourable symptom. This stage of excitement, if not relieved, almost always terminates in a corresponding collapse of the system; when we have orthopnœa, purple lips, sunken and quick pulse, diminished temperature of surface, cold perspiration. The expectoration now becomes scanty, or ceases altogether, and the patient dies suffocated by the accumulation of secretions in the air cells and passages, often as early as the 5th or 6th day.

Vigorous measures at the beginning occasionally check the dangerous symptoms; but the great debility necessarily induced renders recovery slow, and a tedious chronic disease too often ensues, characterized by frequent and violent cough, with a very copious expectoration of puruloid matter, and, in fact, all the symptoms of pulmonary phthisis, sometimes terminating favourably, when aided by climate or season; often carrying the patient off in a state of marasmus and hectic fever.

§ IV. Young children are subject to acute bronchial attacks more speedily fatal, though not apparently so severe or dangerous as the last described variety. It is most common in the spring, commencing with, and retaining the catarrhal character. The breathing is somewhat quickened, with wheezing, but not much dyspnœa, nor uneasiness from supination. The cough is slight, and there is but little expectoration, except when vomiting is induced. The appetite is generally preserved, and the fever is moderate, but the pallor of countenance is remarkable from the beginning, with frequent, and sometimes hard pulse. In the progress of the disease the breathing becomes very variable—sometimes quite free; sometimes threatening immediate suffocation. These remissions and exacerbations, Dr. Hastings remarks, continue throughout the disease, the state of the circulation varying with, and apparently depending on, that of the respiration.

"The disease is not stationary, the symptoms soon become more distressing. The aggravations of the difficulty of breathing are more alarming, and the remissions less perfect. The child often falls into a comatose state. A slightly livid tinge makes its appearance on the lips, from which the pallid cheeks are not entirely free. Even at this late period gleams of hope sometimes burst upon us. For a short time the difficulty of breathing may seem to subside, and the child to be better. But these hopes are never realized; even the next exacerbation of the symptoms may terminate in suffocation." 170.

In urgent cases the disease runs its course in about 72 hours; in the more protracted instances it usually terminates in less than five or six days.

§ V. In this section our intelligent and observant author traces the connexion of bronchitis with cutaneous diseases; but this subject was discussed at the commencement of this paper, and need not be entered upon here.

§ VI. In the sixth section Dr. Hastings takes up complications of bronchitis with diseases of the abdominal viscera. This combination, he observes, is frequently seen in the second variety (§ II.) of bronchitis, arising, as it often does, in habits deteriorated by intemperance.

"In these cases," says Dr. H. "a disease of the liver is brought on, which, by the irritation it produces in the mucous membrane of the lungs, often excites inflammation there. If this occur, we have, in addition to the pulmonic symptoms above described, the various symptoms indicating a languid hepatic affection." 177.

Here there is fulness with tenderness in the right hypochondrium, sense of oppression at the stomach, nausea, bitter taste in the mouth, giddiness or pain in the head, the fæces being generally dark-coloured and fetid. It is no uncommon occurrence for the more severe bronchial inflammations to be accompanied with symptoms of acute hepatitis, especially where the pulmonic affection has succeeded to measles. Gastric inflammation is occasionally combined with bronchitis, and then we have debility, pain in the stomach, increased by ingesta or pressure, together with the usual symptoms of gastritis. The same may be said where peritonitis occurs in combination with bronchial inflammation.

But Dr. Hastings thinks that inflammation of the larynx and upper part of the trachea is the disease most frequently found in conjunction with bronchitis.

"The symptoms," says Dr. Hastings, "which denote the first attack of chronic inflammation of the trachea, which is very insidious in its approach, are a tickling cough and tenderness in some part of the trachea, pressure generally producing a cough. The voice is always changed, the patient often speaking in hoarse whispers. The pulse is accelerated, fever for the most part attends, and a dense mucus is often expectorated.

"If the disease proceed to ulceration, the voice becomes more affected, the pulse is greatly accelerated, and the cough is harrassing, and attended with a copious purulent expectoration. The countenance expresses great anxiety, and the respiration is laborious; but no pain is felt in any part of the chest, though it is often referred to the epigastrium, when the dyspnœa has continued long." 179.

During this chronic disease, exposure to cold or other cause, may light up acute inflammation, which spreads along the whole of the mucous membrane, and then we have the symptoms of bronchitis mingled with those of chronic tracheal disease. We have then, superadded to the symptoms described above, a distressing straitness across the chest, a more aggravated dyspnœa, sometimes a slight lividity of the lips, and a more severe fever. If, by vigorous measures, the inflammation be checked, the original chronic affection of the trachea either goes on slowly to fatal disorganization, or yields, though seldom, to a long course of medicine.

Tumours, as bronchocele, occasionally by pressure on the windpipe involve the whole mucous membrane of the lungs in inflammation. It must also be candidly confessed that the features of bronchitis, especially when the disease is combined with other affections, are many times so faintly or obscurely marked, that it is with difficulty, or not at all, we are able to recognize them.

"Sometimes it is complicated," says our intelligent author, "with a multitude of other phenomena. Sometimes its commencement is imperceptible, its progress insidious and obscure, and its termination slow. Sometimes scarcely any of the symptoms of bronchitis appear; the patient is visibly affected with some other disease, which seems to prove fatal; and the inflammation of the bronchia is not discovered till after death. Sometimes its abrupt attack, its rapid course, and its combination with inflammation of the lungs, pleura, pericardium, or heart, do not allow us, with any degree of certainty, to fix the character or seat of the affection." 182.

Appearances on Dissection. These, of course, are various, according to the different forms of the disease. In the more acute cases, the lungs do not collapse on opening the thorax, although the parenchymatous structure be sound. On slitting open the trachea "it is often found full of fluid, (says Dr. H.) which is sometimes purulent, and at others consists of serous matter, with which coagulable lymph or mucus is generally mixed. The bronchia are, for the most part, plugged up with purulent matter, or tenacious mucus, or bloody serum." 182. When the substance of the lung is cut into, a frothy fluid escapes. In a few instances, Dr. H. observes, no fluid was found in the air passages, but only inflammation of the mucous membrane, which is always present. The capillary vessels of this tissue are invariably red and dilated; sometimes so much so, that this membrane "appears like a congeries of blood vessels." When the disease is less rapid in its progress, the whole of the mucous membrane is not always inflamed. Patches of inflammation are surrounded by portions of sound membrane, while a considerable quantity of serous fluid occupies the air cells. This is particularly the case in those who die of rubeola; but, "when bronchitis (says our author) succeeds to pustular cutaneous diseases, the mucous membrane is sometimes affected with minute ulcerations, and the whole of its texture appears much redder than natural." It is not to be supposed that even in acute bronchitis the inflammation is always bounded by the mucous membrane. The structure of the lungs is sometimes affected. They are either reddened, hardened, suppurated, or tuberculated. This is still more the case in chronic bronchitis, as we shall see farther on. The pleura too is not unfrequently inflamed, exhibiting, *post mortem*, a whitish incrustation, or an effusion into the cavities of the chest. The heart and its envelopes occasionally participate in the inflammation. "The membrane lining its cavities is more particularly the seat of inflammatory action. Coagulable lymph is occasionally found on the auriculo-ventricular valves. The cavities of the right side of the heart are, for most part, larger, and contain more blood than usual." *Hastings*, p. 186. The stomach is sometimes found inflamed, and even ulcerated;—the liver in some cases indurated—of a lighter colour than natural, and enlarged, or its peritonæl coat inflamed and thickened.

> "Every part of the peritonæum is now and then in a morbid state. Its whole surface is granulated; the intestines are united together and covered with a white incrustation; and a milky puriform fluid is contained in the cavity of the abdomen.

In a section on the *nature* of the foregoing affections, Dr. Hastings makes many reflections and observations which evince the soundness of his judgment—the best attribute of a physician. Dr. H. dissents from Dr. Badham, (whose work, by the bye, is a very valuable one, though too much overlooked by the profession at present) respecting the cause of the *wheezing* in bronchitis. Dr. B. attributed it to a certain constricted state of the inflamed parts, rather than to a redundant secretion of mucus. Dr H. takes the contrary side of the question; attributing not only the wheezing, but the occasional exacerbations of dyspnœa, to the mechanical interruption which respiration experiences from redundant secretions in the air passages. Were we permitted to offer an opinion on the subject, we would say that the temporary exacerbations of dyspnœa were partly owing to the exuberant secretions, and partly to the difficult transmission of blood through the lungs when either their substance, coverings, or linings were inflamed. The dyspnœa, in what is termed spasmodic asthma, occurs long before the increased secretion of mucus, and, as Dr. Bree, in his excellent treatise on the subject, well explains, is owing to *irritation* in the lungs, whatever may be the cause of that irritation.* Now we all know, that wherever there is *irritation* there will be an increased *afflux of blood;* and the respiratory muscles being called into unusual exertion is the index of Nature's sufferings, and the effort she employs to obviate them, as Dr. Bree has long ago and ably explained. The head-ache in the second variety of bronchial inflammation is doubtless, in a great measure, owing to the "congestion of the blood-vessel of the lungs," which "necessarily interferes with the due return of blood from the head." The extreme debility attendant on acute bronchitis is readily accounted for by the state of the air-cells in the lungs, preventing the decarbonisation of the blood, and thus occasioning the lividity of the lips, and laborious respiration preceding the fatal termination This interruption in the pulmonary function on the blood must also affect the brain and nervous system, and thus the functions of the whole body are drawn into disorder.

Treatment of Acute Bronchitis. Broussais and Hastings exhibit the following concise view of the treatment in language so precisely similar that the English appears almost a literal translation of the French:—

BROUSSAIS. "Modérer l'effort du systéme sanguin, s'il est outré, par la saignée générale et locale, par les boissons mucilagineuses et aqueuses, un peu acidulées, et par l'abstinence des alimens: favoriser doucement la transpiration et diriger les mouvemens vers l'extérieur par les topiques émolliens, dans la violence de l'éréthisme, par les rubéfians et les vésicans, lorsque la réaction vasculaire et l'activité du systéme nerveux diminuent, telles sont les indications générales qui s'offrent à remplir dans le début des inflammations sanguines de l'organe pulmonaire." 148.

HASTINGS. "To moderate the excitement of the sanguiferous system—general blood-letting, acidulated mucilaginous drinks, and abstinence from all stimulating food. To promote expectoration and perspiration—antimonial and saline medicines. To direct the fluids towards the surface, and relieve the congestion of the debilitated capillaries—local blood-letting, blisters, and rubefacients." 208.

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* See the whole of section II. in Dr. Bree's work, where great erudition and judgment are combined to elucidate the subject.

Dr. Hastings observes, that although general blood-letting is by far the most powerful for diminishing the excitement of the system, yet it is not equally applicable to all the varieties of bronchitis. In the *first* variety, for instance (§ 1) it is seldom necessary to detract blood, unless the fever be considerable, when it may be done with safety. In the *second* variety, venesection is generally proper, though to be employed with caution, as Sydenham long ago observed.

> "The abstraction of ten ounces of blood from the arm early in the disease, sometimes mitigates the symptoms, after which it is generally more safe to depend upon an attention to diet, proper expectorants, and local evacuations. The peculiar tendency to effusion often renders the treatment of this affection difficult, as we are sometimes deterred by this cause from pursuing the blood-letting when the inflammatory symptoms indicate its employment. In this event we must subdue the inflammation by those means which are least likely to bring on effusion." 209.

But as the *third* variety of bronchitis sometimes occurs in robust habits, occasioning violent symptoms, the short state of excitement quickly terminating in irremediable debility, so the small space of time allowed for antiphlogistic measures, must be seized, for the purpose of making a decided impression on the complaint. Here blood-letting should be boldly employed—from twenty to thirty ounces may be taken from the arm at the first venesection, unless symptoms of syncope supervene. Although few cases yield to one bleeding, yet the repetition must be determined by the symptoms of the disease, and by the strength of the patient.

When the disease attacks children, general blood-letting, as far as the strength will permit, should be employed. And we may here observe that children, from a year upwards, may almost always be bled from the arm, although practitioners have a very general idea, that at such early periods we cannot procure blood from the brachial veins. Dr. Hastings thinks there is an advantage as well as facility in opening the external jugular veins of children—"as the blood is taken from a vessel which pours its contents into the thorax." But surely the brachial veins transmit their blood to the same point, and almost as directly as the jugulars. If children do not bear bleeding as well as adults, still, when life is menaced, we have no alternative—without detraction of blood there is no hope, and even that powerful measure does not always arrest the progress of the disease. In combinations of bronchitis with chronic ulceration of the trachea, the debility is so great, that bleeding, to any extent, is rarely admissible.

Vomiting has been recommended by many authors.

> "The benefits," says Dr. Hastings, "which arise from emetics are two-fold: they unload the primæ viæ, thus removing causes of irritation; and they increase the expectoration, on which, as is above observed, the favourable issue of the case so much depends.
>
> "Again, when the disease occurs in young children, emetics appear to be extremely serviceable, the stomach and bowels being generally in a bad state, and the bronchia loaded with redundant secretion." 212.

Our intelligent author justly observes, that the aqueous solution of tartarized antimony is, in general, the best medicine for producing these effects, excepting in young children, where ipecacuan is to be preferred. Antimony generally excites diaphoresis, and, in fact, opens most of the secretory vessels; thus reducing the whole mass of fluids, and consequently checking the inflammation of any structure. Dr. H. thinks they should be given in saline draughts, and that nitrate of potass should always be combined whenever there is much fever.

In the second variety of bronchitis some have recommended the more stimulating expectorants. They cannot, Dr. H. thinks, be proper where the heat is much increased.

> "In the advanced stage, however, when the inflammation is nearly subdued, and the bronchia are clogged, ipecacuanha combined with squills is often of great service; but in all cases of this disease, as long as the excitement is considerable, if antimonial remedies be excepted, no expectorants are so useful as mucilaginous mixtures." 213.

Cathartics have not been considered beneficial in thoracic inflammations, as they were supposed to check expectoration. Our own experience has long ago taught us that, in common pulmonic inflammation they are exceedingly useful—anterior to the complete establishment of expectoration—that is, during the first days of the disease, as they not only powerfully deplete the whole system, but act by derivation from the pulmonary to the abdominal organs. When, however, Nature has fairly established expectoration, we hold it to be unsafe, because we have witnessed its bad effects, to act with any degree of force on the mucous surfaces of the bowels, since it very commonly interrupts the salutary discharge from the lining membrane of the lungs. If bleeding and purging are properly managed in the early stage of thoracic inflammation, there will rarely be profuse expectoration, and sometimes none at all. Dr. H. thinks there is less danger from purgatives in pectoral diseases than was once imagined, and directs that, in every variety of bronchitis, the bowels be kept lax, while at the commencement an active purgative should be administered to clear well the alimentary canal.

In the combination of bronchitis with abdominal disease, it is evident that the free employment of cathartics is of the utmost importance; particularly where the liver is affected, and its secretions deranged. Here we must always have recourse to cooling and mercurial purgatives. "From small doses of the neutral salts, given so as to keep up a constant catharsis, the greatest benefits ensue." *Hastings.*

> "Mercurials, exhibited so as to act upon the system, are not usually beneficial; nevertheless, when in the sixth variety the liver is evidently affected, small doses of blue pill may be given, so that the gums may become tender." 214.

When bronchitis is combined with inflammation of the trachea, (producing symptoms resembling croup) Dr. Hastings thinks that analogy would lead us to employ calomel in frequently repeated doses. In one case (14th) where bronchitis occurred in conjunction with *chronic* inflammation of the mucous membrane of the trachea, great advantage arose from calomel and antimonial powder.

> "The voice had become very indistinct, and the quantity of sputa was considerable. The patient took eight grains of calomel every day for several weeks, and eventually recovered."* 215.

In bronchial inflammation, as long as there is much fever, Dr. Hastings thinks opium is prejudicial. "But when that declines, and irritability of the system and air-passages still prevails, it not unfrequently allays the cough, and calms the patient. But opiates must be employed with great caution, especially in the *second* variety; for when the secretion is copious, and the strength much reduced, they interrupt, for a time, the efforts to expectorate, and may thus prove fatal."

> "In combination with small doses of calomel, opium may sometimes be exhibited at an earlier period of the disease. When conjoined, these remedies not only diminish the cough, and assist expectoration, but seem likewise to regulate the secretions throughout the system." 215.

In the *second* variety, especially when a disposition to effusion is manifested, mild diuretics are serviceable. But in all varieties of acute bronchitis, as Dr. Hastings justly observes, expectoration occasionally stops, apparently from want of power in the system; in which deplorable cases we must endeavour to support the strength and relieve the bronchia of the secretions with which they are clogged. Ammonia is a medicine the best calculated to effect the latter purpose, and in truth we have seen patients, as it were snatched from impending suffocation by this valuable medicine.

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* In laryngeal inflammation of the *chronic* kind, we consider mercury a valuable auxillary to the regular depletory measures, and counter-irritants. We may refer for a good instance to Dr Hall's case of Laryngitis requiring laryngotomy, in the Medico-Chirurgical Transactions; or the second vol. of our *Quarterly Series*, *p*. 610.

Dr. Hastings appears to have entirely overlooked the effects of a regulated temperature of the patient's atmosphere, while labouring under acute bronchitis. This we consider to be a defect in a systematic work, and Dr. Hastings will doubtless allude to it in a future edition, many of which will ultimately be called for. Broussais particularly alludes to the necessity of a regulated temperature in the sick man's chamber:—"par un appartement convenablement échauffé on donnera à l'atmosphère ambiante une température qui favorise les evacuations cutanées."* The same able physician directs our attention to warm clothing, and especially flannel next the skin, to keep up a moderate degree of excitement there. The French physician having seen so many catarrhal inflammations protracted into a dangerous chronic state, apparently, in some cases, from debility, is more disposed to give tonics and mild nourishing diet, as soon as the expectoration becomes white and thick, than British practitioners are inclined to do.

> "Aussitôt que l'expectoration blanche et épaisse annonce la résolution ou l'excrétion qui se décharge dans les bronches, on combine les toniques aux émolliens, on permet les alimens, et l'on raméne peu à peu le malade à son genre de vie accoutumé." 148.

In these lingering inflammations between the acute and chronic states, Broussais administered diluted red wines, and the decoction of cinchona lowered with mucilage—a medicine which he found preferable to all other tonics. Where intermittent fever is combined with bronchial inflammation—no rare case among soldiers in unhealthy situations—the combination is very difficult to manage; for if the fever continues, the bronchitis is aggravated by the cold fits determining the circulation to the interior organs, while bark or other tonics given to stop the ague, have generally the effect of heightening the local inflammation in the mucous membrane of the chest. In such circumstances, Broussais thinks it is more dangerous to exhibit stimulating febrifuges than to allow the intermittent to take its course for some time till the bronchitis is reduced.

But to come to the local means of cure. Topical blood-letting and blisters are of most importance in acute bronchitis. As general bleeding diminishes the excitement of the heart and larger vessels, so local detractions relieve the weakened and dilated capillaries—hence much advantage is derived from combining both measures. "Whenever, therefore," says Dr. Hastings, "in bronchitis the symptoms require general blood-letting to be repeated, we should also have recourse to local evacuation." Blisters, our author observes, should not be applied "till the excitement has been considerably relieved by blood letting." But when bronchitis occurs in phlegmatic habits, and assumes the form of peripneumonia notha, blistering may be employed from the beginning, and is one of the principal remedies to be relied on in that variety of the disease. In obstinate cases the blisters should be large, so as to cover the whole anterior part of the chest, and the surfaces kept open, or new ones applied.

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* Tom. I. p. 149.

The tepid bath together with local fomentations or cataplasms, may also be used to remove the tension of the surface and excite diaphoresis. For the debility which almost always succeeds attacks of this disease, "nothing," says Dr. Hastings, "is more appropriate than a light nourishing diet with change of air." 218.

From page 218 to page 263 of Dr. Hastings's work, nineteen interesting cases of bronchitis are faithfully detailed, and very satisfactorily illustrate the principles and practice of which we have endeavoured to present an analysis to our readers. This part of the work we recommend to the *study*, not merely to the *perusal*, of our brethren, as containing a series of important and authentic documents which deserve their most serious attention.

CHRONIC BRONCHITIS. This disease, as Dr. Hastings truly remarks, embraces a wider field of investigation than we should have, at first sight, supposed. It is so often complicated with other affections, and so frequently gives origin to the most fatal disorganizations in the thoracic viscera, that it is entitled to a more rigid inquiry than it has hitherto obtained in this country at least.

Dr. Hastings divides chronic bronchitis, as he has done the acute, into several varieties—rather too many indeed, we think, for common practical purposes.

1. The first variety may be considered as the sequela of the acute form in old persons, attacking the patient generally at the commencement of cold weather, and lasting through the winter. The irritable mucuos membrane is sensible to every atmospheric vicissitude—the respiration is uneasy, with occasional wheezing—the fits of coughing are most violent in the morning—the expecto-

ration is copious, consisting of tenacious muco-purulent fluid, sometimes white and frothy. None, or only transient pains are felt in the chest—there are generally signs of disorder in the digestive organs, with sense of weight or pain in the epigastrium, white or loaded tongue, loss of appetite, quickened pulse, high-coloured or scanty urine, irregular bowels. Occasionally, however, chronic bronchitis exists for a long time without much constitutional ailment, or febrile action. This variety of the disease sometimes lays the foundation for hydrothorax, but more commonly subsides as summer advances.

2. The second variety resembles tubercular phthisis. The cough is severe, especially on lying down and getting up—the expectoration copious and part of it lumpy, varying in size from that of a pea to that of a bean, which lumps sink in water, and refuse to mingle therewith, being viscid, sometimes translucent, sometimes opaque. With this expectoration there is often a flaky substance, not unlike the ramifications of the bronchia, which floats on the surface of the water. To these, Dr. Hastings remarks, there is usually added a third kind of matter, of a white, yellow, or greenish colour, which sinks in water, but by agitation may be broken into ragged portions, and somewhat diffused therewith. Lastly, some blood is often expectorated. The breathing is quickened, and often laborious, with a sense of oppression and tightness across the chest, although a full inspiration can be taken without pain. In bed in the morning the pulse seldom rises above 90; but when the patient sits up, the pulse is generally from 100 to 110, with an evening augmentation to 120. The temperature of the surface is pretty steadily above par, with a dryness and occasional roughness.

> " In the night partial perspirations break out, which more especially appear about the head and breast. The desire for drink is always greater than in health. The urine is constantly high-coloured and deposits a copious red sediment. The face is often pallid, but there is sometimes a flush on the cheek, which more frequently appears during the evening febrile exacerbation. At the same time that the symptoms above enumerated occur, the patient visibly loses flesh and strength, and becomes more unequal to every kind of exertion." 268.

If the disease be not checked, a more alarming train of symptoms soon supervene. The debility and emaciation advance; the cough and expectoration increase—the latter sometimes to a pint or a pint and a half in the night—principally of a yellow or greenish colour, sinking in water, and diffusible, by agitation, therein. The dyspnœa is now distressing, as is the sense of tightness and weight across the chest, rendering the patient breathless on the slightest exertion. The pulse is now seldom under 120, and in the evening it is more. "The tongue becomes cleaner, and, in many cases, all fur is removed: it assumes a shining appearance, and is redder than in health." There is nocturnal perspiration, leaving the patient much exhausted. "The body," says Dr. Hastings, "is inclined to constipation early in the disease; but, as the aggravated symptoms advance, a diarrhœa comes on, and, under these accumulated ills, the patient at length dies with all the appearance of tubercular phthisis." 270. Under proper management the second, phthisical stage may often be prevented. In the advanced stage it not only resembles phthisis in appearance but in fatality.

The 3rd variety which our author describes, we shall pass over, as we really do not think it likely that it will often be distinguished in practice from the foregoing. Here, indeed, we conceive Dr. Hastings has refined with unnecessary minuteness—a thing that ought to be guarded against in all practical illustrations of disease. We shall also pass over the 4th variety of chronic bronchitis succeeding cutaneous eruptions; and the 5th, resulting from irritating substances acting on the mucous membrane, as in the cases of stone cutting and other unhealthy occupations, where hemoptysis is commonly produced; and where the disease disappears if the cause is removed, referring to the work itself for a more particular detail, in order that we may occupy more space with that variety of chronic bronchitis connected with diseases of the abdominal viscera.

6. One of the most common of these attendants of bronchitis is a chronic disease of the liver, of which our most intelligent author has introduced five interesting examples.

> "It very often happens," says Dr. Hastings, "that in the commencement of this modification of the disorder we have no symptoms which can lead us to suspect any pulmonic affection. They are altogether such as are usually produced by hepatic disease. We have pain in the right hypochondrium, inability to lie on the left side, irregularity of the bowels, loaded tongue, and depression of spirits. The first warnings of disease in the bronchial membrane are very slight. There is a dry cough, unattended with any pain, which is often considered the necessary attendant on hepatic affection. By degrees the cough becomes more troublesome, and when it continues for some time, a tenacious mucus is expectorated. The breathing, too, is in some degree affected, and the patient complains of a weight and tightness across the chest. As the disease advances the cough is more troublesome, and the expectoration becomes copious: still, however, we do not trace much of the purulent character in the matter expectorated; it is principally mucus. The expectoration, however, in a more advanced stage, increases in an astonishing manner, and at length becomes purulent. Blood is not unfrequently mixed with the colourless matter, and sometimes pure

blood is coughed up in the early stage of the disease; but in the cases of this kind which have been seen by the author, it is not a common occurrence." 277.

In these cases there is often a dull kind of pain, and always a tenderness in the epigastric region; and in progress of time, an irregular hectic is formed, differing, Dr. H. thinks, considerably from the true tubercular hectic.

"It is true there is usually some evening exacerbation, during which the face is generally flushed. The hands and face, also, are occasionally bedewed with perspiration in the night; but this, for the most part, goes off before morning. The emaciation becomes very perceptible, though it does not proceed so rapidly as in tubercular phthisis." 277.

With the above, the disorder of the digestive organs is well marked by flatulence, irregularity of bowels, furred tongue, impaired appetite, sense of fulness in epigastrio, "the dyspnœa and cough being always worse when the digestive organs are much oppressed." If the progress of the disorder be not checked, the symptoms approach still nearer to those of tubercular phthisis. Hectic fever becomes completely formed, and the patient is wasted with profuse perspirations, dropsical symptoms often preceding the fatal event.

Ulceration of the *stomach* occasionally is combined with chronic bronchitis; but here the emaciation is considerable *before* any marks of the pulmonic irritation are developed. Gastric symptoms also precede the thoracic affection. It is well known that symptoms resembling tubercular phthisis occasionally supervene on disease of the mesenteric glands. In cases of this kind, Dr. Hastings thinks that accurate investigation will generally show that the pulmonary affection is confined to the mucous membrane lining the bronchia and air-cells.

Post Mortem Appearances. Non-collapse of the lungs, on opening the thorax, with discharge of frothy fluid when an incision is made into their parenchyma. The capillaries of the mucous membrane are always dilated—"in the most marked examples the membrane is throughout like a congeries of vessels, and very much resembles the villous coat of the stomach or bowels, when a fine red injection has passed into its minute vessels." *Hastings.*

This injected state of the capillaries is sometimes only in patches, the intermediate spaces being nearly natural. The bronchial membrane is usually thickened, "and not unfrequently its surface is pulpy." It was not uncommon for Dr. Hastings to find this membrane ulcerated, especially where the irritation was caused by mechanical substances. The bronchia and air-cells are almost always filled with a purulent or muco-purulent fluid, mixed with bloody serum, and a frothy substance. When the disease extends beyond the mucous membrane, "the most common deviation from a natural state, (says Dr. Hastings) is a certain degree of thickening of the substance of the lungs, from which they become more solid." Tubercles are sometimes found in the lungs, when the mucous membrane is inflamed—they are sometimes in an incipient, sometimes a suppurated state. The pleura is often diseased. "Adhesions take place, and not unfrequently the whole of the serous membrane is full of tubercles." The heart is sometimes organically disordered, particularly in its valvular structure; and where abdominal disease have preceded the pulmonic attack, the liver is usually found in fault.

> "It is generally enlarged and hard, and sometimes exhibits that peculiar nutmeg appearance which is so common. Its peritonæal coat is often very much thickened, and occasionally tuberculated. In some examples tubercles are also found in the substance of the liver; but this does not frequently happen.
>
> "When bronchial inflammation has succeeded to long continued abdominal inflammation, the peritonæum is usually much diseased, being closely adherent to the bowels and thickened. The whole of its reduplications on the viscera are sometimes thickly beset with tubercles of various sizes, some not exceeding a pin's head in magnitude, others as large as a pea. In some parts of the serous membrane, many of them being clustered together, give it a very unnatural appearance for a considerable extent. The intestines are all closely united together, and their peritonæal covering is apparently much inflamed.*
>
> "The cavity of the abdomen generally contains a quantity of yellowish fluid, which has flakes of gelatinous matter swimming in it.
>
> "The mesenteric glands are frequently found much enlarged, and occasionally suppurated." 284

Here ends the pathology of Dr. Hastings, with which intelligent author we have now, for some time, travelled in the strict analytical path, but from whom we must diverge for a moment to other sources of information on the subject under investigation.

Man, and the diseases by which he is assailed, are every where signally modified by the skies above him, the earth beneath him, and the host of moral aud physical agents around him. In all causes, therefore, it is beneficial to take a comprehensive view of things, to prevent what Celsus complained of two thousand years ago:—"ex quo incidit, ut alia atque alia summi auctores quasi *sola* (auxilia) vindicaverint, prout cuique cesserant."* In civil life, and in the bosom of peace, men are not exposed to such intense causes of disease, as in the tumults of war, and the enterprizes of emigration; or at least if they are exposed to them, they have multiplied resources and means of counteraction. The pathology of diseases therefore varies, under different circumstances, and would appear to lead to different conclusions. Thus in the campaigns of the French armies, on the Continent, Broussais found that the almost universal pathological character of chronic bronchitis, or catarrhal inflammation, was an *induration of the parenchymatous structure of the lungs*, produced, he thinks, principally, by repeated exposures of the soldiers to cold and wet, under states of debility and privation.

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* These appearances are similar to those so faithfully described by Dr. Baron in his work on "Tuberculated Accretions of Serous Membranes."

> "This chronic induration," he observes, "steals on in the intervals of great constitutional movements, although slight causes of irritation will readily kindle up the original storms. After seven, twelve, or fourteen days of pyrexia, the circulation becomes calm, the heat natural, the appetite returns, the complexion freshens, and strength appears to be fast returning. There only remains a cough, which gives little trouble during the day, but experiences an exacerbation at night. Frequently the cough is dry and husky; sometimes accompanied by much expectoration. In this state the patient goes about his affairs for a fortnight or a month; but now, on reflection, he finds that he loses strength, instead of gaining it—that his breathing is very laborious on going up an ascent. His physician will perceive a slight acceleration of the pulse, and a flushing of the cheeks, in the evening—gradually the complexion becomes pale and sallow—the face becomes bloated—the legs edematous, and the strength fails. All these symptoms go on increasing, especially the cough, which renders the night most distressing. Still the patient never desponds: and as in approaching his final goal, he becomes incapable of taking either exercise or nourishment, he is nevertheless calm, and apparently free from sufferings. Finally, in two, three, or sometimes four months, he becomes anasarcous all at once, and dies suddenly."†

The organic alterations which M. Broussais found after death, in these cases, were—a reddening and induration of the parenchymatous substance of the lungs, so as to present the appearance and consistence of liver, in the centres of which indurated portions were sometimes observed certain softened and pasty points, as though the structure had putrefied. The mucous linings and pleural coverings were occasionally in a diseased state, with effusions or false membranes in the chest. This induration he considered to be always the effect of an irritation, of longer or shorter duration.

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* Celsus, Lib. iii. cap. i.

† Phlegmasies Chroniques, Tom. I. p. 144.

> "Ce point d'irritation a pris naissance dans les capillaires de la muqueuse. Nous avons observé que, né dans les capillaires de glandes muqueuses, le point d'irritation ne se que trop souvent propagé, d'abord dans toute la membrane, d'où il a, par suite, envahi le parenchyme. Arrivé a son dernier periode, il a transformé tout le poumon en une masse rouge, composée, autant que les sens peuvent nous en convaincre, de vaisseaux de toute espèce remplis d'un sang coagulé.—*ib.*

But to return to Dr. Hastings, under the head "Ratio Symptomatum of Chronic Bronchitis," our able and ingenious author makes many judicious observations, which our limits will not permit us to quote. The section on "Diagnosis," is also interesting, and this we cannot entirely pass over, without culling some valuable matter. The great object of diagnosis is between bronchitis and tubercular phthisis. But it is to be borne in mind that not only are these two affections extremely difficult of distinction in advanced stages, but they are often combined.

> "Early in the disease, the abscence of pain during inspiration, the capability of resting on either side in bed, (when there is no abdominal disease,) the wheezing noise in respiration, the leaden colour of the lips, and the pallidity of the countenance, the appearance of the sputa, consisting almost entirely of mucus, occasionally streaked with blood, are symptoms sufficiently well marked to distinguish chronic inflammation of the bronchia from tubercular phthisis." 290.

When in an advanced stadia of the disease the symptoms usually indicative of tubercular consumption become intermingled with those of chronic bronchitis, "the peculiar pallidity of countenance still continues, and there is in the majority of cases no pain in the chest; or, if it come on, it is diffused over the whole chest. The dyspnœa is not so great as in tubercular phthisis, and the patient can take in a much larger volume of air into the lungs." These *plus* and *minus* distinctions we have always considered extremely unsatisfactory.

> "The quantity of matter expectorated in this disease is much greater than in tubercular or apostematous consumption, except at the time a vomica gives way, when large quantities are brought up; but this excessive discharge does not continue long in the latter disease, whereas in chronic bronchitis we often see a pint or a pint and a half of matter expectorated during the night, and that for a long period together. We have not a short tickling cough in bronchitis; it is deep and sonorous. The paroxysms of hectic fever are much less regular in chronic bronchitis than in tubercular phthisis. The perspirations are partial, confined, perhaps, to the breast and upper extremities. The emaciation too is, generally speaking, less in inflammation of the mucous membrane

than in tubercular phthisis, though we do meet with cases in which the emaciation is as great in the former as in the latter affection. When the pulmonic symptoms have arisen from a diseased liver, it is a strong presumption that the seat of the disease is in the bronchial membrane; for in almost all cases of this description the mucous membrane is the part affected. When this combination occurs, the spirits are always depressed; and in addition to the usual pulmonic symptoms, we have in this form of the disease a painful and distended epigastrium, unnatural stools, and disordered digestion. The mouth is dry in a morning, and the tongue loaded. The fits of coughing are constantly excited when the stomach is overloaded, and are apt to come on when the patient is lying on either side in bed." 292.

Treatment. Broussais lays down two main indications in the cure of chronic inflammation of the mucous membrane of the lungs:—1st. to diminish the general excitability, and keep the circulation quiet; 2d. to draw the excitement and the fluids towards other organs, and particularly towards the skin. These we believe to be the grand objects to be kept in view. Of the means employed in the treatment of this complaint, Dr. Hastings observes that—"some act by directly enfeebling the force of the circulation; some moderate excitement by re-establishing the secretions throughout the system; others act on parts in the neighbourhood of that which is diseased; and a few are *directly* applied to the inflamed membrane." Both Broussais and Hastings give an unfavourable picture of the effects of *inhalation* of medicated liquids in diseases of the mucous membrane of the lungs; and were it necessary to strengthen such authorities, we could bring forward strong proofs, from our own personal observation, of the non-efficiency of these medicated local applications.

"Le seul corps étranger," says Broussais, "qu'on fasse parvenir dans les vésicules bronchiques, c'est l'eau en vapeur; mais il faut qu'elle soit chaude, et par sa temperature elle fait plus de mal qu'elle ne procure de soulagement par sa qualité relâchante. Je n'ai jamais vu résulter un grand avantage des fumigations. Tous ces moyens ne font que boursouffler la membrane, et augmenter le sentiment de plenitude et de compression pectorale."*

We think that M. Broussais has gone too far in condemning so decidedly the vapour of warm water as injurious in inflammation of the mucous membrane of the lungs, since we have seen considerable advantage derived from this measure; but we fear that what he says respecting medicated fumigations will be found too true. The vapour of tar is the only kind of inhalation which Dr. Hastings has tried.

"Not one instance has occurred in the author's practice of even temporary relief in tubercular consumption by the inhalation of this vapour:

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* Broussais, Tom. I. p. 151.

indeed, it has appeared in some examples of this kind to cause a very tiresome irritation in the glottis, which has increased the cough. This has not been so much the case in chronic bronchitis; in this disease it seems to assist other remedies in restoring the mucous membrane to its healthy secretion; and in some very obstinate cases the inhalation alone has appeared to remove the diseased action in the mucous membrane of the lungs. In other instances the inflammation has been aggravated and rendered more acute by it. From the author's experience of this remedy, it appears that when the habit of body is irritable, and the inflammation at all active, the symptoms are increased by its use; but if the disease have been long in a chronic state, and the habit of body be not irritable, relief follows its application." 309.

The above, we believe, will be found a fair exposition of the effects of tar vapour—at least it corresponds with what we have seen ourselves; and we had opportunities of witnessing these effects a few years ago, when the hopes of relief drew crowds of pulmonary invalids to one of our principal naval dock yards, for the purpose of inhaling the vapour of tar on a large scale there, under the direction of a gentleman who published on the subject. Many phthisical patients, indeed, as is usual when any new remedy is tried, declared themselves wonderfully benefitted, for a time; but this benefit was, in most cases, either purely imaginary, or merely owing to the unusual evacuation of the lungs by the long-continued fits of coughing occasioned by the irritation of the tar fume. The tubercular disorganizations kept on, of course, their regular march.

In respect to blood-letting, Dr. Hastings justly observes, that although pulmonary inflammations, above all other maladies, are relieved by this powerful remedy, yet, "when the disease has existed long in the bronchial membrane, a considerable change takes place in its structure, and general debility always occurs, so that we cannot, in all cases, employ it with success." Even in those cases, Dr. Hastings thinks, where the chronic cough presents itself in persons not very much advanced in life, and whose constitutions are strong, with full pulse, inclined to hardness and frequency, large blood-lettings are improper, and "it is, perhaps, better to employ local than general blood-letting, for the former can be more frequently repeated, and the vessels of the lungs are thus unloaded at less expense to the system."

When catarrh has existed a long time in young persons, and produced symptoms resembling those of incipient phthisis, venesection will be improper. In such cases, recovery is slow, and is rather to be expected from the conjoined operation of several remedies than from the sudden operation of depletion. Repeated local detractions of blood are the safest means of reducing the superabundant excitement in the air-passages. Broussais, the most energetic of our French brethren, does not even mention local or general bleeding in chronic inflammation of the mucous membrane of the lungs. He merely cautions his countrymen against the employment of tonics and stimulants in this disease, which were probably in vogue when he wrote. In fact, the continental practice is here, as on too many other occasions, very inert.

After the force of the circulation has been weakened, but not till then, Dr. H. thinks blisters and rubefacients may be applied to the chest. "They generally relieve the cough, and by the irritation they occasion on the skin, seem to lessen the superficial inflammation going on in the mucous membrane. By their action, also, the purulent secretion from the internal surface of the lungs is sometimes converted into the natural mucus of the part." In those obstinate cases resembling tubercular phthisis, the more permanent drain and counter-irritation of a seton or caustic issue, will be necessary. Broussais, and the continental physicians in general, attach much importance to topical applications to the chest. Broussais states that he had cured obstinate and long-continued catarrhal inflammations by large poultices to the front of the thorax. "Le soulagement fut si prompt, qu'il surpassa mon attente." "I have always," says he, "employed this remedy when circumstances permitted." "I prefer cataplasms to blisters when the patient appears, at the same time, nervous, irritable, and yet disposed to plethora." These cataplasms, he thinks, are superior to fomentations, as they are more manageable, and less apt to produce a chill, by wetting the patient's linen or bed-clothes. The same author highly praises rubefacients of lytta or mustard, in bronchitis. Issues are so important, that M. Broussais considers that physician reprehensible who has lost a patient without employing them. He observes, however, that, instead of being of service in *ulterior* stages, they hurry on the fatal event. It is at the point where acute inflammation is terminating in chronic, that issues are peculiarly serviceable. Caustic issues and setons, M. Broussais thinks, are nearly equal in point of utility. He tried cauteries in some cases with success; but does not speak very decidedly on their efficacy.

As in that variety of chronic bronchitis denominated "tussis senilis," the cough and dyspnœa are much aggravated by the redundant and accumulated secretions in the air-cells and passages, so emetics, by dislodging these secretions, are useful, as giving temporary relief. They have not, in Dr. Hasting's opinion, much effect "in forwarding a radical cure."

The digitalis purpurea," says the same author, "does not seem applicable to all cases of chronic bronchial inflammation; but when it assumes the form of catarrhal phthisis, the fox-glove, by diminishing the velocity of the pulse, and by promoting a free discharge of urine, often relieves the breast. It is highly beneficial in all those examples in which bronchial inflammation has a tendency to terminate in dropsy, its powerful diuretic effects preventing the accumulation of the exhaled fluids; but when the disease is attended with much protration of strength, digitalis, even if indicated, must be exhibited with great caution." 303.

Squill "is often serviceable when bronchitis assumes the character of chronic cough. Dr. H. has generally exhibited the powder in conjunction with ammoniacum, as in the pil. scill. comp. of the college pharmacopœia, and in old people, without much fever, found it of benefit. "The tincture of meadow saffron appears a very promising remedy in chronic bronchitis, and certainly possesses very remarkable powers. It allays the cough, promotes the flow of urine, and keeps up a regular alvine discharge." Dr. H. thinks it can be given much more generally than squills, being less irritating, and therefore administrable where there is considerable fever, which, indeed, is relieved by this medicine, as it opens the secretions. Dr. H. usually gives twenty drops thrice a day, unless diarrhœa supervene, when the dose is diminished. If twenty drops produce no effect, it may be increased till the bowels, skin, or kidneys are acted upon. "If there be much quickness of the pulse, the author generally combines eight or ten drops of the tincture of digitalis with that of the meadow saffron; from which combination the cough is often relieved, and the quickness of the pulse is diminished."

Drs. Duncan and Armstrong have lately recommended certain vegetable balsams in chronic inflammation of the mucous membrane of the lungs.

"The latter thinks that the copaiba deserves to be conspicuously placed amongst the internal medicines, as it seems to exert a specific influence on the mucous membrane. It has failed with the author in producing so much benefit as he was led to hope from Dr. Armstrong's report. Whenever there is much fever, it appears to be increased by this remedy, and it does not always allay the cough, or alter the expectoration. It frequently disagrees with the stomach when given in sufficient doses to benefit the pectoral systems, and sometimes a diarrhœa comes on under its use. Occasionally it produces all these troublesome effects without relieving the cough. But this balsam certainly seems to exert an influence on the mucous membrane, although, perhaps, not a much greater one than the squills or meadow saffron. Further inquiry, however, may determine in what respects it is superior and in what inferior to these remedies. In the mean time, Dr. Armstrong has done considerable service by bringing the copaiba into general notice." 305.

As the balsam of copaiba is very frequently adulterated, the want of success in Dr Hastings's hands might have been partly owing to such circumstance.

A pill composed of extractum conii four grains, and pulveris ipecacuanhæ one grain, taken three times a day, often allays the cough, and produces a more healthy expectoration.

> " There are some states of the system during the progress of chronic bronchitis in which cinchona may be useful; chiefly in those instances that succeed to acute bronchitis, where the debility brought on by the acute attack is very considerable. In such examples, if the dyspnœa be not increased, the benefits arising from its exhibition are sometimes very apparent. The profuse perspirations and other discharges are not only restrained by this remedy, but it occasionally appears to alter the secretion from the mucous membrane of the lungs, and thus brings about a more healthy condition of that membrane, by invigorating its blood-vessels and restoring their natural tone. In these cases it may be combined with diluted sulphuric acid, which also tends to restrain the colliquative sweats that so often accompany this disease." 306.

Broussais observes that the cinchona sometimes proved useful; but he asserts that it is dangerous to continue it for any length of time—" parce qu'il n'est point ici le remede specifique." Pectoral ptisans, indeed, and diluent acidulated drinks with plenty of gum, appear to be the principal internal means which M. Broussais makes use of in this disease.

When chronic inflammation of the bronchia is combined with hepatic affection, Dr. Hastings recommends that " very small doses of calomel, or the blue pill, should be conjoined with the other remedies, and continued till the gums become slightly red, or till the appearance of the dejection is more natural, and the tenderness in the epigastric region is diminished." For the purpose of lessening the quantity of mercury in these cases, Dr. Wilson Philip has strongly recommended dandelion to be combined with it. Dr. Hastings remarks that this last medicine must be given in large doses, when, if the stomach bear it well, the flow of bile is promoted, and a healthy action of the bowels is kept up.

> " If chronic bronchitis be combined with slow inflammation of the peritonæum and mesenteric glands, mercury may be carefully administered; but the disease generally resists this as well as every other remedy." 307.

The great utility of calomel in croup would tend to the hope of its being beneficial in chronic bronchitis; but the debility attendant on the latter disease is a strong objection. It is therefore chiefly used where the complaint is combined with abdominal affection.

> "There are cases, however, in which it is advantageous in chronic bronchitis uncombined with any disease in the abdomen. These sometimes occur after measles, when the shrillness of the voice indicates considerable affection of the mucous membrane lining the trachea." 307

Dr. Hastings and M. Broussais give different evidence respecting opium in chronic inflammation of the bronchial membrane. Dr. H states that this medicine "can only be regarded as a palliative, and from its stimulating effects is often prejudical, as long as there is much fever." In the chronic catarrh of old people, however, its use is sometimes, he thinks, unavoidable. "In such cases a full dose may be given at bed time, which will procure some rest in the early part of the night, before there is much accumulation in the bronchia and air-cells; but we must be very cautious in its use, as by preventing expectoration it sometimes proves fatal." *Hastings*.

> "Opium," says M. Broussais, "is a precious sedative, when the gastric susceptibility (which we scarcely comprehend the meaning of in this case) will permit its use. If it be combined with ipecacuan powder, it promotes the cutaneous discharge, and suspends the cough for whole nights—an unspeakable advantage in chronic catarrhal inflammation. It is far better to prevent the superabundance of bronchial secretion by opiates and mucilages combined with light tonics, than to be always endeavouring to expectorate it by squills and other acrid medicines, which only injure the already too sensible mucous membrane of the stomach." *Tom. I. p.* 154.

We have always looked upon the operation of opium in this class of complaints as rather preventive of *secretion* than of expectoration; and consequently after the febrile stricture is taken off, as unaccompanied with that danger which physicians so often speak of. Dr. Hastings himself remarks, that "in the latter stages of chronic bronchitis, where the quantity of matter expectorated is very large, and the cough very troublesome, there is no remedy so powerful in allaying the uncomfortable irritation about the glottis as opium." He thinks it, however, not always free from inconvenience or danger, even in such cases.

Our readers are aware that Dr. Duncan, of Edinburgh, strongly recommends lactucarium as a substitute for opium, in many cases of pulmonary affection.

> "Of all the medicines," says this venerable physician, "which I have employed for alleviating cough in phthisis, and indeed as a sedative in many other diseases, next to opium, I have found no article so beneficial as that substance which some have lately denominated lettuce opium, and which I termed lactucarium."* 308.

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* Observations on Pulmonary Consumption. By A. Duncan, senior, M. D. 2d edition, p. 162.

In the sixth volume of the college transactions lately published, Dr. Louis Kerckhoffs states, that he administered, with great success, the white willow bark in powder, with sulphur in form of an electuary, to two patients who were apparently in the last stage of consumption, from affection of the mucous membrane of the lungs. Claret and nourishing soups were given at the same time.

For the effects of prussic acid in affections of the mucous membranes, we must refer to our analysis of two publications on this subject in the present number of the journal.

In the class of diseases under consideration, an attention to wha has been quaintly termed the non-naturals is of more consequence than medicine. The diet must always be bland and unirritating, though it is not necessary to adopt the pure and refrigerating regimen necessary in acute diseases. In the early stages where there is much disposition to general vascular action, milk and vegetables form the proper aliment—in the more advanced stadia, when considerable debility has supervened, a more nutritious diet may be allowed. Cordial stimulating drinks are, of course, always improper.

The air which the patient breathes is of equal consequence with the food. The maxim of Celsus is peculiarly applicable to chronic bronchitis—"pessimum ægro cœlum est quod ægrum fecit." Change of air often removes the disease when all other measures have failed. It is evident that as vicissitudes of temperature form one of the most frequent causes of the complaint, and are always apt to renew it, a warm and steady climate is extremely desirable. In this country a residence on the southern coast—especially about Penzance, for a few months in the summer, is to be recommended, as it sometimes invigorates the constitution, and restores the tone of the vessels on the bronchial surface, so as to prevent a return of the disease.

> "In this climate," says Dr. H. "flannel next the skin during the spring and winter months, by slightly stimulating its vessels, sustains the circulation on the surface, and thus tends to relieve chronic inflammatory diseases of the pulmonary system." 311.

The bowels, of course, are to be regulated, "but purging is not beneficial." We doubt much whether we have not had too great a theoretical dread of purging when the mucous membrane of the lungs is carrying on the process of superabundant secretion. In two or three instances we have lately seen the balance of irritation beneficially shifted from the pulmonary to the gastric membranes, by smarter purgatives than we were formerly in the habit of giving. We throw out this hint for others to act on or not, as they may think proper.

Exercise, where it can be endured, is very serviceable in chronic bronchitis—especially horse and carriage exercise, as well as the swing, invented by Dr. Carmichael Smith.

We must pass over a great portion of Dr. Hastings's book, dedicated to the record of numerous cases illustrative of the principles which have been here laid down, in order to dedicate a page or two to the last chapter in the work, which treats of dropsy as dependant on inflammation of the mucous membrane of the lungs. Our readers will have perceived that Broussais makes dropsical infiltrations a very common attendant on the ulterior stages of bronchial inflammation—or rather of the condensations of lung which so often are induced by the disease. Dr. Hastings appears to take a proper view of this pathological phenomenon. He justly considers that the long continuance of the bronchial disorder must embarrass the function of the heart, not only by the mechanical obstruction which will be offered to the lesser circulation of the blood, but also by the non-purification of the blood itself in the lungs.* The appearances on dissection corroborate this supposition.

> " The lungs and the right side of the heart are much loaded with blood. The bronchial membrane is always inflamed, its texture often thickened, and sometimes ulcerated. The bronchia and air-cells are usually filled with a frothy fluid, mixed with pus. Occasionally the lungs are otherwise diseased. There is generally a considerable quantity of fluid in the sacs of the pleura, and very frequently the pericardium contains more than six ounces of fluid.
>
> " The heart is in almost every instance enlarged, and sometimes adheres to the pericardium. On examining its internal structure we often find some marks of disease. These in general are but slight, and arise from inflammation of its inner membrane, which produces some degree of thickening about the auriculo-ventricular valves. In some cases the disorganization is much more considerable, these valves being found almost cartilaginous." 382.

No sooner is the structure of the heart, particularly of its valves, diseased, than the venous system becomes congested, and dropsical effusions are the consequence. On the treatment of this variety of dropsy Dr. Hastings makes many judicious observations. He comes to the same conclusions with Dr. Crampton, respecting the indications afforded by the urine; namely, " that he has now forsaken it as a guide to the treatment of dropsy." He wisely observes that "we should rather be directed in the treatment by the state of the functions of the (internal) organs, and general inflammatory symptoms, than depend on the signs shown by any one excretion." He does not venture quite so far as Dr. Crampton in blood-letting, though he evidently approves of the principle. He inclines more towards local abstractions of blood.

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* Till the dispute is settled respecting the oxygenation or decarbonization of the blood in the lungs, we might perhaps designate the process *pulmonization* of the blood.

> "Eight or twelve leeches applied to the chest sometimes do more in relieving congestions about the thorax than several ounces of blood taken from the arm; and the symptoms are thus relieved by a smaller expenditure of the general strength." 397.

Dr. Hastings does not wish, however, to underrate the efficacy of venesection. "He believes that in many examples of dropsy succeeding to bronchial inflammation, in which the heart is gorged with blood, and the venous system much congested, general blood-letting, and general blood-letting only, can save the life of the patient." Our author conceives that the indiscriminate use of drastic purgatives in dropsy has been productive of considerable mischief. In the variety of dropsical affection under consideration, these drastic purgatives appear to him inadmissible—excepting towards the close of the disease, when the infiltrations are fast advancing, and suffocation is impending. In such cases they are to be had recourse to for temporary relief. He trusts principally to purgatives of the saline class, given so as to produce a constant laxative effect. The supertartrate of potash is strongly recommended, especially when combined with the tartrate of potash and infusion of senna. In respect to diuretics, the following are our author's sentiments:—

> "In this dropsical affection we frequently find that a copious flow of urine almost immediately succeeds the loss of blood, and the swellings occasionally disappear without any diuretic remedies having been employed. This, however, is not common; the more usual result is, that the increased flow of urine does not continue, if the venesection be not followed up by remedies which act on the kidneys. The author has principally used for this purpose the following diuretics,—squills, foxglove, meadow saffron, and chrystals of tartar." 401.

With digitalis and squill he frequently combines small doses of the blue pill, especially where any hepatic disease is suspected.

> "We are much indebted to those writers who have reprobated the indiscriminate use of mercury in dropsical diseases; but in this variety its administration, if kept within proper limits, is almost always beneficial. After the employment of blood-letting this mineral may not only tend to remove the congestion which invariably exists in the vessels of the liver; its general stimulating properties may also prove serviceable, by exciting the debilitated capillaries of the mucous membrane of the lungs to a more vigorous contraction." 405.

The meadow saffron, he thinks, deserves a fair trial in these cases. "In chronic inflammation of the bronchial membrane, it appears to regulate the secretion, to diminish the cough, and relieve the dyspnœa." It is evidently diuretic, and less stimulating than squills. The supertartrate of potash, however, should never be neglected; its mild saline diuretic and antiphlogistic qualities being peculiarly appropriate to the disease. Great care is necessary in the regulation of the diet, both during pulmonic affection, and in the convalescence which succeeds. After acute diseases the appetite is generally too keen, for some time, and blood is made too fast. Nothing is more common, in such cases, than relapses, from the weakened organ again taking on disease, especially where tonics are early and injudiciously given after the subsidence of the dropsical symptoms.

It is now high time to close this article, already rather too far extended. The numerous specimens of Dr. Hastings's work which we have laid before our readers, cannot but have impressed them with a high opinion of its own merits and its author's talents. It therefore needs no farther commendation from us, as the importance of the subject, and the ability with which it is handled by Dr. Hastings, will speedily induce the purchasers of select practical works to place the volume in their library, for reference as well as perusal. To our respected brethren on the Continent, especially M. Broussais, and to our able and zealous countrymen, Dr. Harrison and Mr. Alcock, we have been much indebted, in the construction of this eclectic article, and to them we offer the homage of our professional esteem.

MEDICAL AND PHILOSOPHICAL INTELLIGENCE.

College of Apothecaries.—At a meeting of the druggists and apothecaries of the city and liberties of Philadelphia, held March 13, 1821, the following report and constitution, prepared by a committee appointed at a previous meeting, were considered and adopted: viz.

A very general impression appears to have prevailed amongst the druggists and apothecaries of this city for some time past, that from a concurrence of various circumstances, a departure from the correct customs and established principles of the drug and apothecary business has in some instances taken place. As the consequent effect the deterioration of many drugs and medicines in constant use and of great importance in practice, and medicines of inferior or sophisticated qualities are too often introduced into the shops. The want of proper pharmacological information on the part of some druggists and apothecaries who vend, and of physicians who buy, have mainly tended to the production of these irregularities.

The mischiefs that are necessarily attendant upon such a state of things have frequently attracted the attention of those interested in the trade, and means to remedy them have repeatedly been in agitation. All attempts heretofore made in relation to effecting more amendment having proved abortive, a number of the druggists and apothecaries, at the suggestion of one of the Faculty of Medicine in the University of Pennsylvania, directed the attention of the Trustees of that Institution to the subject, and in consequence, they have created a degree of Master in Pharmacy, to be conferred on those, who on examination, and having complied with certain requisites, may be found possessing the necessary qualifications and information.

The motives and views of the Trustees in this proceeding are highly commendable, and as far as their plan extends will be useful. But as must be apparent to those most conversant with the species of abuses that exist in the business and require correction, the plan of the trustees will not reach them, and whatever benefits may be derived from it must be prospective and slow in operation.

This measure of the University has had, however, the happy effect of recalling to the subject the attention of the druggists and apothecaries. It has roused them to a sense of the propriety of placing their business on the respectable footing it ought to possess as a branch of the science of medicine, by eradicating from it all present, and preventing a recurrence of future injurious practices; by creating the means of easily acquiring a perfect and scientific knowledge of drugs and medicines and the most approved mode of preparing them; and obtaining an acquaintance with sciences connected with their profession. These are important and highly desirable objects, and can only be effectually obtained by the interposition and active agency of the druggists and apothecaries themselves

The establishment of a College of Apothecaries, the attention of which will constantly directed to the qualities of articles brought into the drug market; in which subjects relating to their business and its objects can be discussed, and information beneficial and interesting to the trade communicated; and the erection of a school of Pharmacy, where lectures written expressly for the information and instruction of druggists and apothecaries will be delivered, as appear to the committee the best adapted to effectuate the reformation generally desired in the business, and obtain the advantages which have been the objects of much solicitude.

They therefore recommend to this meeting, an association to be formed by the druggists and apothecaries of this city, on the plan and for the objects above suggested, and with this view beg leave to offer the following constitution for such an association to its consideration.

Preamble.—Pharmacy is an important branch of the science of medicine. Deposited by the division of the science in the hands of the apothecary, it requires, on his part, intelligence, skill and integrity, to prepare and compound medicines for administration to the sick; to distinguish and select those drugs that are of the best quality, and possessed of those virtues, on whose efficacy reliance is placed to cure diseases; and to deal in no others. On the qualifications of the apothecary in these respects must depend, in no small measure, the success of the physician in his practice, and often the lives of his patients. The business therefore, to be conducted correctly and with safety to the community, renders varied, extended, and peculiar information necessary, not easily acquired without a regular course of studies and practical education; and without which, mistakes are liable to occur, involving health and life.

The different modes in which medicines can be prepared, differing in strength and consequently in their powers; the ease with which mixtures and sophistications totally destroying their virtues can be made and which are difficult of detection, offer great incitements to cupidity, and open a wide door to abuses that experience teaches, are inevitably introduced by an unregulated competition. More injuries have been sustained by society from such a competition, than benefits have been conferred; for the reduction of price has chiefly been effected by a deterioration of quality. The existence of a state of things so pregnant with evils of great magnitude, must bring the profession into disrepute, and loudly calls for a timely and effectual remedy upon those who feel an interest in maintaining its respectability.

In order therefore to provide the means of instruction by the establishment of a school of Pharmacy in which shall be taught those branches of knowledge essential to the education of an apothecary; to incite a spirit of pharmaceutical investigation and research and to diffuse information amongst the members of the profession; to guard the drug market from the introduction of spurious, adulterated, deteriorated or otherwise mischievous articles, which are too frequently forced into it, by watching and giving early warning of their appearance; to regulate the business as far as may be practicable and consistent with our social Institutions; to establish such rules as may promote an harmonious intercourse among its members; to remedy many existing abuses; to advance the character and forward the interests of the profession; the undersigned druggists and apothecaries of the city of Philadelphia agree to associate together under the constitution hereunto annexed, to the principles of which they give their earnest support, and by which they will abide.

Article 1. The association shall be styled the Philadelphia College of Apothecaries, and shall consist of those druggists and apothecaries who shall sign these articles, and of those who shall hereafter be admitted under the regulations established by this constitution.

Art. 2. The officers of this college shall be a President, two Vice Presidents, a Secretary and Treasurer, who shall be elected within one month from the adoption of this constitution and subsequently at the meeting held in the month of March in each year.

Art. 3. The President, two Vice-Presidents and Secretary shall perform the duties of their respective offices at the meetings of the College, and shall sign the certificates of membership and the Diplomas of the Institution. The treasurer shall receive and take care of the funds of the College, giving bond and security if required to the President for the faithful performance of his trust.

He shall pay no monies unless on the order of the President or the Chairman of the Board of Trustees, countersigned by the respective Secretaries of the College or board as the case may be; and present a statement of his accounts at the meeting in the month of March, or when required by the Board of Trustees.

Art. 4. The stated meetings of the College shall be on the last Tuesday of the months of March, June, September, and December, for the transaction of business, and receiving of essays and communications on subjects connected with pharmacy, materia medica and chemistry. Twenty members shall constitute a quorum.

Art. 5. The affairs of the College shall be transacted by a board of Trustees, consisting of sixteen members, who shall be elected within one month from the adoption of this constitution; one-half of whom, to be determined by lot among themselves, shall serve till the meeting in September, and who shall subsequently be annually chosen, one-half at the meeting in the month of March, and the other half at the meeting in September. The officers of the College shall be ex-officio members of this board. The board of Trustees shall meet once a month or oftener if necessary, by adjournment or on the call of their chairman, and a majority of the board shall constitute a quorum for the transaction of business. It shall be the duty of the board of Trustees to establish a school of pharmacy, provide suitable apparatus, and a library, and appoint one or more lecturers as may be deemed expedient, on materia medica, chemistry, and pharmacy, and on such branches of natural science as may be useful in the instruction of an apothecary; to appoint a committee of inspection, who shall examine all articles of drugs and medicines brought into the market and submitted to them, and report their character to the board of Trustees, who shall make the same public if required by the interests of the trade and the good of the community; to appoint a committee of equity, to settle any disputes that may arise in the transactions of business by the members of the College, which may be referred to them. They shall be entrusted with the election of members of the college, and have power to frame rules and regulations for the examinations and granting of diplomas to those who shall attend the lectures of the school of pharmacy.

Art. 6. Any person who has been regularly educated as a druggist or apothecary, or who has received a diploma from this College, and is of correct, moral deportment, may be proposed for membership, in writing, by two of the members of the College, at a stated meeting of the Board of Trustees, and balloted for at the next stated meeting. Three-fourths of the votes shall be necessary to an election.

Art. 7. Each person who signs this constitution, and every person on becoming a member, shall pay the sum of five dollars; and to maintain the funds of the College, an annual contribution of five dollars shall be paid by each member. No member who has neglected to pay his installation fee, or is in arrears six months for his annual contribution, shall be entitled to a vote.

Art. 8. Complaints may be preferred against any member of this College to the Board of Trustees, for malpractices and misconduct in his business; and if on investigation it shall appear, that he has been guilty of adulterating or sophisticating any articles of medicines or drugs, or of knowingly vending articles of that character, or of deteriorated qualities, the facts may be reported by the Board of Trustees to a meeting of the College publicly called, when a majority of all the members of the College concurring, he may be expelled.

Art. 9. No amendment or alteration of this Constitution shall be made, unless proposed to the College by two members at one stated meeting, considered at the next and adopted by two-thirds of the members present.

At a meeting of the College of Apothecaries, held March 27, 1821, the following persons were elected officers of the College.

President—Charles Marshall.
Vice-Presidents—William Lehman, Stephen North.
Secretary—Daniel B. Smith.
Treasurer—William Heyl.

Trustees.

Charles Allen.
Samuel Jackson.
Charles Marshall, jr.
Henry M. Zollikoffer.
Daniel Elliot.
Henry Troth.
Samuel Biddle.
Peter Williamson.
Peter Lehman.
Samuel P. Wetherill.
Jeremiah Morris.
Thomas Wiltberger.
Daniel Thatcher.
Thomas M'Clintock.
Warder Morris.
Frederick Brown.

Copy of the Report to the Secretary of State for the Home Department, from the National Vaccine Establishment, dated May 18, 1820.

To the Right Honourable LORD VISCOUNT SIDMOUTH, Principal Secretary of State for the Home Department, &c. &c. &c.

National Vaccine Establishment, Percy-street, May 18, 1820.

MY LORD,

The Board of the National Vaccine Establishment have the honour to report to your Lordship, that the number of persons vaccinated during the last year, in London and its vicinity, exceeds the number of any former year; it amounts to 8,957. Within the same year, 51,005 charges of vaccine lymph have been distributed to the public.

An abundant, an unceasing supply, which could only be afforded by such an Institution as that which the Board have the honour to direct, has enabled us to answer the earnest demands for vaccine lymph, from various parts of Great Britain and Ireland, from Jamaica, St. Vincent's, Dominica, Tortola, Grenada, Nevis, Montserrat, Antigua, St. Christopher's, Demerara, Hayti, and the Cape of Good Hope.

Lymph has also been occasionally requested from the continent of Europe, and charges were lately transmitted to Hamburgh and Hanover.

Our correspondents in Great Britain and Ireland have reported to this Board, that the number of persons vaccinated by them, during the year 1819, amounts to 74,940; forming, with the number vaccinated in London and its vicinity, a total of 83,897 persons in one year: yet many send no returns, or the number would be considerably greater.

From these facts the Board think themselves entitled to conclude, that the practice of vaccination in his Majesty's dominions continues to advance, and therefore that the confidence of medical practitioners, and the confidence of the public in that practice, remain unshaken; notwithstanding many unfavourable occurrences, with which it will be our duty to acquaint your Lordship.

The reports transmitted to this Board likewise warrant the conclusion, that, wherever small-pox inoculation is abandoned, and vaccination exclusively favoured or commanded, the most striking illustrations of the value of the Jennerian discovery are uniformly afforded; for, in addition to those places mentioned in former reports, in which small-pox is now unknown, the Board have received information that no case of that disease has occurred since the year 1804, at Shottisham in Norfolk; nor since the year 1817, in the city of Gloucester. The boroughs of Clonmell and Newton Limavady in Ireland, and Mothwell in Carmarthenshire, with the whole country for twenty miles around it, are reported to have completely succeeded in the extirpation of the small pox; and in the island of Guernsey, only one solitary case of that fatal distemper is known to have occurred during the last year.

The career of vaccination appears, however, to have been less brilliant in its native country than in some parts of the continent of Europe, where the practice of it is enforced by legal enactments, and inoculation for small pox is prohibited by severe penalties. Under such regulations, it is affirmed that the small pox has ceased to exist in Denmark for the last eight years; and that the knowledge of this fact has now induced his Danish majesty to proclaim the same in his West India colonies.

The Board are also informed, by a most interesting communication from Dr. De Carro of Vienna, that similar decrees have been published in the Austrian Dominions, and that small pox is now confined to that portion of the poor who, by concealment, contrive to evade the imperial ordinances. He announces that, since the year 1799, when he gave the first example to the continent of Europe by vaccinating his two elder sons, he has never seen a single case to weaken his confidence in the efficacy of that practice.

An important letter, together with a treatise on this subject, has also been transmitted to the Board from Dr. Krauss, an intelligent physician, who is charged with the superintendance of vaccination in the circle of Rezat in Bavaria. He affirms that in that circle, containing half a million of people, small pox has never occurred since the year 1807.

If these facts be correctly reported to us, they would appear to afford convincing proof that the extinction of small pox is entirely within our power.

The testimonies of some of our correspondents in this country, are by no means so favourable. They concur in showing, that great numbers of persons who had been vaccinated have been subsequently seized with a disease presenting all the essential characters of small pox; but that, in the great majority of such cases, the disease has been of comparatively short duration, unattended by symptoms of danger. In several of these cases, however, the malady has been prolonged to its ordinary period; and in eight reported cases it has proved fatal.

It appears to us to be fairly established, that the disposition in the vaccinated to be thus affected by the contagion of small pox, does not depend on the time that has elapsed after vaccination; since some persons have been so affected who had recently been vaccinated; whilst others, who had been vaccinated eighteen and twenty years, have been inoculated and fairly exposed to the same contagion with impunity.

Nor is it undeserving of remark, that, whilst cases of small pox in the vaccinated have frequently been reported to us from some parts of the kingdom remote from the metropolis, no cases of a similar nature are known to have happened in other districts equally populous. Very intelligent surgeons in the different counties of Norfolk, Devonshire, Middlesex, Cheshire, and Staffordshire, who together have vaccinated more than 30,000 persons, assert that they never saw or heard of small pox in any one of their vaccinated patients.

But no assertions of individuals, however respectable, are so well calculated to direct the judgment of your Lordship as the registers of public charities.

The practice of vaccination was begun in the Small Pox Hospital of London in the year 1799, soon after the promulgation of Dr. Jenner's discovery, and has been continued to the present day. In the last annual report it is stated by Dr. Ashburner, "that the benefit of vaccination has been extended within the year to 3,297 persons; that one only of the 46,662 cases mentioned in former reports has been since affected with the varioloid eruption occurring after vaccination."

At the Foundling Hospital, vaccination was introduced nineteen years ago; and we are informed by Dr. Stanger, that only two cases of disease, bearing any resemblance to small pox, have hitherto occurred in the vaccinated of that institution.

Mr. Mac Gregor assures us, that, in the great assemblage of the sons and daughters of soldiers who are brought up at the Royal Military Asylum, no case, even of the mildest small pox, has ever occurred after vaccination.

Under the immediate direction of the National Vaccine Establishment, more than 60,000 persons have now been vaccinated in London and its vicinity, and of this large number only five are reported to have been subsequently affected with small pox; although positive orders are given at every station to report all such cases as are even suspected.

This success in London, where the vaccinated are continually exposed to the contagion of small pox, is strong evidence in favour of the practice adopted and inculcated by this Board, and induces us to believe that a departure from that practice is one source of the evil which has prevailed in different parts of the kingdom.

The great principle of that practice is to affect the constitution of each individual very completely with the vaccine disease; and the board have thought it right to direct that lymph should never be employed from any vesicle in which the slightest irregularity or imperfection can be observed, nor even from a perfect vesicle after the areola is formed; that two punctures be made in each arm, in order to secure at least three perfect vesicles; that one vesicle on each arm should be left unopened, and the lymph be suffered to be absorbed or desiccate; that if the vesicles be accidentally broken or much injured, or if they present any irregularity, the patient should be carefully re-vaccinated as at first.

From extensive experience and numerous reports, the Board have become most earnestly desirous that more, rather than fewer, vesicles should be produced. We think it especially wrong to confide in one vesicle, and highly imprudent to open all: but no treatment will be effective in certain constitutions; for twenty-one cases of small pox occurring after small pox have been reported to us within the last twelve months, three of which were fatal.

We have regarded it, my Lord, as one of our first duties to consider attentively the different cases of small pox after vaccination, as they have been transmitted to us. We have endeavoured to investigate them, free from the influence of theory, and solely intent on the discovery of truth: and, when we take into our view the immense number of the vaccinated, when compared with the reported failures;—when we reflect on certain peculiarities of constitution, that will exempt some individuals from all common laws;—when we think on the ignorance and carelessness which the vaccinator has but too often betrayed;—when we recollect the mild form which small pox is reported to have very generally, though not universally, assumed in the vaccinated;—we cannot hesitate to assert, that our conviction in favour of the experiment of universal vaccination is unshaken.

It is a painful duty for us to state to your Lordship, that 712 persons are reported, by the Bills of Mortality of London, to have died of small pox within the last year; and that the ravages committed by this disease in many other cities, and in many parts of the country, have also been great; yet we believe them to be fairly attributable to the neglect of universal vaccination, and the partial but too frequent practice of small pox innoculation.

(Signed) J. Latham, m. d. *President.*
Arthur Daniel Stone,
Robert Bree,
Edward Thomas Munro,
George L. Tuthill, } *Censors of the Royal College of Physicians.*
David Dundas, *Master of the College of Surgeons.*
Thompson Forster,
Everard Home, } *Governors.*
By order of the Board,
James Hervey, m. d. *Registrar.*
[Medical and Physical Journal for Dec. 1820.

Anatomical discovery respecting the Lymphatic Vessels—Dr. Vincenz Fohmann, Prosector at the Anatomical Theatre at Heidelberg, announces, in the Salzburgh *Medizinisch-Chirurgische Zeitung*, (No. 46, June, 1820,) a discovery respecting the lymphatic vessels, that seems calculated to elucidate some important points in physiology.* In his researches, during last winter, respecting the intimate structure of the intestines of man and inferior animals, he found, by accident, in the large intestine of a lion which he dissected, a net-work of lymphatic vessels which had not been remarked in any animal, and which, on being injected with mercury, appeared to him to *inosculate directly with veins:* (ihm unmittelbar in *venen uberzugehen schien.*) This discovery led him to make new researches in other animals, and he found similar lymphatic vessels in other *carnivores;* namely, the *procyon lotor* and the common *dog*: but here he could not clearly ascertain the passage of the mercury into the veins. He repeated, in the month of April, the injection of the same lymphatics in the *phoca vitulina*, and what he could not effect by means of the *vasis chyliferis*† *of the large intestine*, he effected perfectly by those of the small intestine; then, after having filled all the *lymphatics of this intestine* and having pursued them to the *pancreas aselli*, he found some small *vasa efferentia*, by which the quicksilver had passed into the mesenteric vein. He repeated the injection in a second *phoca*, and found the metal past into the same vein as in the foregoing experiment. He on this occasion put a ligature on all the mesenteric vessels, at some distance beyond the large mesenteric glands; and he found that those glands, as well as the veins, were filled with the mercury. He has witnessed the same facts in the dog, cow, and horse; but has not yet had an opportunity of examining the state of those parts in man: but he considers that other physiologists will investigate this subject; and he makes a question whether the thoracic duct really receives all the chyliferous vessels, or whether the names of Pecquet and Mascagni have caused a supposition to be admitted as a fact.

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* It is a remarkable circumstance, that Professor Harless, of the University of Bonn, had formed a notion that such an anatomical structure probably existed, before this discovery of Dr. Fohmann, as he states in his work (which we shall notice particularly in the next half-yearly Review of the Progress of Medicine,) *Ueber und Gegen den Neueren Eempiaismus in der Physiologie und Medicin*, seit 59; such a structure, he thinks, being calculated to explain and reconcile the apparently opposing results of the experiments of several eminent physiologists respecting absorption.

† This is Dr. Fohmann's own expression; but, on speaking of the vessels in question in the lion, he uses the term *lymphgefassea:* he, indeed, employs the terms *chyliferous* and *lymphatic* vessels synonymously.

Dr. Fohmann announces that he intends to publish, almost immediately, a work on the true disposition and developement of the intestinal glands of men and inferior animals, in which the facts above stated will be more particularly developed.

London Medical and Physical Journal, *Nov.* 1820.

Animal Magnetism.—The following proposal has been made and published, (in the *Archiv fur den thierischen Mngnetismus*,) by M. Chastenet de Puysegur, the first animal magnetiser in all France. " Let me be invited, let me even be ordered, if it be wished, to confine myself for six weeks in an hospital for the deaf and dumb, that I may lay in wait for, and seize, the occasion of transient disease in some of the pupils, to magnetize them. Let them not be informed in any way of what they are to experience; but let them suppose that I am present as an ordinary physician. Several of them, unavoidably, will become somnambulists, and in the number there will certainly be found some who are more mobile than the rest, who will become sensible of the influence of my *animal* magnet. Well then, if in this state I do not make them act, walk, take what I choose, or answer by writing all the questions I shall put to them relative to their welfare and their health, not from my speaking to them, since they would not hear me, but solely by the mental impulse of my will; let it be decided that there is neither magnet nor magnetism in man. I will even subscribe to the decision that, during the more than thirty years which I have affirmed and published its existence, I have been only an apostle of error, of illusion, and of deceit."

When a sect of fanatics, about a century since, pretended to have the power of raising up to life a dead body, and proposed a test of their ability, the government acceded to their request. When we remember that there has been appointed a professor of animal magnetism at the Royal Academy of Sciences at Berlin, (Dr. WOLFERT;) that this professor superintends an infirmary for its application; and that Russian and Austrian physicians are appointed by their governments to attend him, and learn his method, we must acknowledge that the subject has assumed an air of sufficient importance to induce some government to consent that M. Chastenet de Puysegur shall have the opportunities he desires.

[*Ibid, October*, 1820.

General Considerations on the Mode of Administration of Medicines; and Observations on the Internal Employment of Acetate of Lead. By Professor Fouquier. Arranged and published by Dr. Ratier.—After detailing the precautions employed to preclude the possibility of deception in the experiments, made with a view of ascertaining the precise operation of various articles of the materia medica on the animal economy, and refuting the objections which may be advanced against their accuracy, the author circumstantially narrates thirteen cases illustrative of the efficacy of acetate of lead, in suppressing the colliquative sweats of phthisis pulmonalis. The results appear to be stated with great candor and impartiality, and from them the following corollaries are lastly drawn:—The acetate of lead is endowed with a peculiar property, by virtue of which it suppresses the colliquative sweats of phthisis. This action may be considered as specific, since it takes place almost constantly, and independently on circumstances which would seem to oppose it. This substance cannot correctly be accused of producing the lead colic. It may be administered without danger to the amount of twelve grains a day. The mean dose is from four to eight grains. A certain quantity must be introduced in order to produce its sensible effect. As the sweats of phthisis, kept up by a permanent cause, have a tendency to recur on the cessation of the remedy, the employment of the acetate of lead should obviously be continued.

In the bodies of those whose death afforded the opportunity of examination, the intestinal canal seems not to have exhibited any trace of injury from the administration of this powerful remedy. It was invariably given in the form of pills. The expectation held out by some authors of the cure of phthisis by acetate of lead, is acknowledged to be quite illusory. In none of the cases here recorded does the salt, although largely given, appear to have induced severe colic. [*London Med. Repository for Jan.* 1821.

Royal Society of London.—Nov. 9. A PAPER by SIR E. HOME, was read, entitled "*On the Black Rete Mucosum of the Negro, being a Defence against the Scorching Effects of the Sun's Rays.*" The author began by stating some observations which had induced him to form the opinion that the scorching effects of the sun's rays are produced, not merely in virtue of their heating power, but by the joint agency of their heat and light. To verify this opinion, he made several experiments which showed that the face and hands may be exposed to a temperature of 100°, or even 120°, without pain being produced, provided the light be excluded: but that if the same, or even an inferior degree, of heat be produced by the direct rays of the sun, the parts are scorched, and blisters are produced. This effect he found to be completely prevented by covering the hand or face with black kerseymere; and the same purpose is attained by the black rete mucosum of the negro. In those cases when a black covering was superimposed, perspiration came on; and the same takes place on the skin of the negro, when exposed to the direct rays of the sun.

The author observed, also, that the eyes of those animals exposed to the strong light of the sun are furnished with a black pigment, apparently for the same purpose; while others, which are abroad by night, and consequently not needing such a protection, are not provided with it.

[London Med. and Phys. Jour. for Jan. 1821.

We extract the following aphorisms respecting the treatment of *Puerperal Fever*, from the Inaugural Thesis of a Dr. LEGOUAIS, maintained during the last year before the Faculty of Paris; not because they are *new*, for they are merely principles which Dr. ARMSTRONG had previously established in the most satisfactory manner, but because the author was a pupil of Professor CHAUSSIER, and for a long time a resident student at the Lying-in Hospital *La Maternité*. They are, therefore, deduced from very extensive observation, and are, no doubt, the precepts of the excellent Professor whom we have just named. Such coincidences of opinion, especially when the extraordinary acquirements, remarkable acumen of observation, and very rare intellectual talents, of Chaussier are considered, cannot fail to give a great degree of interest to the following paragraphs.

"1. Excepting in the cases where there exist some particular and manifest contradictions to the use of local, and especially of general, evacuation of blood, in the treatment of puerperal peritonitis, this measure should be the first to be employed.

"2. In order that bleeding may be followed by success as certainly as we can ever expect in the treatment of diseases, it should be employed in the first stage,—that is to say, in by far the greater majority of cases, before the termination of the first day of the disease; and, moreover, that a sufficiently abundant quantity of blood should be taken away to destroy at once all the violence of the malady.

"3. When employed not in conformity with those two essential conditions, sanguineous evacuations, far from being useful, always become very injurious to the patient, by destroying her strength and the resources of nature, without having a durable influence against the disease.

"4. In the cases,—and these are the most common instances, where constipation is one of the attendant circumstances of the disease, another indication, not less pressing for its fulfilment, is joined with that of blood-letting, which is to excite alvine evacuations, by gentle, or even by somewhat active, purgatives, and thus to maintain a sort of artificial diarrhœa during the whole of the duration of the disease; a duration which, in the greater number of cases where the termination is favourable, does not exceed the space of from two to four days.

"5. When a diarrhœa exists from the commencement of the disease, nothing should be done to suppress it when it is moderate: when, on the contrary, it appears excessive, none but mild and soothing means should be employed, such as emollient clysters, mucilaginous drinks, and some opiates; and we should by no means add to the irritation by the administration of astringents."

[*Ibid.*

We select the following theorems from the Inaugural Thesis of Dr. Ratier, sustained last year before the Faculty of Paris. They are, in almost every instance, only conformable with some of the inferences comprised in the excellent Treatise on the Blood of Mr. Thackrah; but it can never be considered uninteresting to witness a similarity of results from the researches of different persons on an important and practical subject relating to medicine. Alluding to the *buffy coat* on the blood, Dr. Ratier says—

"1. It is foreign to the state of perfect health, and equally so to bilious, mucous, typhoid, and asthenic, diathesis; to passive hemorrhages; and to nervous and organic affections.

"2. It appertains to the state of plethora, but only when it exists with a disposition to inflammations in general, and especially to those of the serous and parenchymatous membranes. It may exist without general inflammatory disposition in the system, when there is a very intense local inflammation.

"3. Its presence, and, when it exists, its thickness and density, depend on the intensity of the inflammation, on the largeness of the incision, on the form and rapidity of the jet, and, lastly, on the form of the vessel in which the blood is received.

"4. It is always composed of fibrine,—at least of a great proportion of that substance.

"5. It always manifests itself in a direct ratio with the intensity of the inflammation.

"6. Its presence, in connection with the other symptoms of inflammation, confirms the diagnostics of that affection.

"7. The absence of it should not be considered a reason for not resorting to blood-letting, if it be otherwise indicated.

"8. Its presence without clearly evident signs of inflammation should rouse the attention of the practitioner, and render him very circumspect if he employs tonics.

"9. Some anomalies may occur in respect to its existence, and in some cases, even with all the apparently requisite conditions, it is not manifest; but then we constantly find an extraordinary degree of density of the coagulum."

Report of the Surgeons of the New York Eye Infirmary.

At a meeting held at the City Hotel on Friday evening, the 9th instant, for the purpose of adopting the means of perpetuating the benefits of the Infirmary for curing diseases of the Eye, Col. Wm. Few, was called to the chair, and James Eastburn was appointed Secretary.

A report of the history and progress of the Eye Infirmary under the care of J. KEARNY RODGERS, M. D. and EDWARD DELAFIELD, M. D. was read by the latter gentleman, as follows:

In the month of August last, an Institution was founded in this city, under the title of "*The New York Eye Infirmary*," for the purpose of curing diseases of the eye among the poor; a class of our citizens, from their habits and occupations most exposed to diseases of that important organ. It had been observed that at the public institutions of this city alreaded founded, for the cure of the diseases of this class of our inhabitants, comparatively a very small number of persons afflicted with affections of the eye applied for relief, while it was known, and the result has proved, that a very large number of individuals were constantly labouring under such diseases. Such patients could hardly be considered objects of our city hospital, as long as that valuable institution is so constantly filled with persons affected with diseases of a more formidable and dangerous nature. For the same reason, the attention of the physicians of the City Dispensary is so much occupied with calls of a more urgent nature, that they have little leisure to attend to a class of diseases, whose effects, although sufficiently distressing, and such as to incapacitate those labouring under them from pursuing their ordinary avocations and gaining their usual subsistence, are not generally dangerous to life. And yet, not a few of the paupers of this city have become so, from blindness either complete or partial, induced by disease of this class, either curable in the first instance, or still capable of allevation, sufficient to enable the sufferers to enjoy a very useful degree of vision, and place it in their power to gain an honest subsistence, without calling upon the public bounty for support. In this manner, an Infirmary of this description, may at a very trifling expense save to society the usefulness of many worthy citizens, and prevent them becoming a burthen to the public for the remainder of their lives. These facts are not stated merely as hypothetical, for it is from information derived from the medical attendant at the alms house at Bellevue, that it is stated that a considerable number of paupers are annually received and supported there, who have been reduced to the necessity of subsisting on the public bounty by loss of sight induced by diseases which might have been cured by proper attention in the first instance.

Another class of citizens, and a still more numerous and useful one than the abject poor, are essentially benefited by such an institution. A large portion of our population consists of industrious tradesmen and mechanics, of females with very small incomes, and various other individuals, whose means are just adequate to their support while in health; who have it not in their power to bear the expense of obtaining good advice, when afflicted with diseases threatening the loss or impairment of sight, and yet have too much independence of feeling to apply to any general hospital or dispensary for relief. To an institution founded for the sole purpose of curing diseases of the eye, such persons apply and receive relief, and to this class of persons, perhaps more than to all others, such an institution is invaluable.

Such were the objects which induced the individuals concerned in this undertaking, to engage in it, and the result has more than answered their expectations, and demonstrated to them the usefulness and necessity of their labours.

The Infirmary has now been in operation nearly seven months; and during that period, *four hundred and thirty-six patients* have applied, and received various degrees of relief. From the nature of the institution, it is impossible to make a report of the result of all the cases which have been treated.

As most of the patients are prescribed for at the Infirmary, a large portion of those who receive advice, never report the result of their cases; and continuing to attend till nearly cured, do not, when the cure becomes perfect, return to give notice of it. Notwithstanding this difficulty, however, the result of a sufficient number of cases has come to the knowledge of the Surgeons of the Infirmary, to prove to them that their efforts have been crowned with as much success as generally attends such institutions.

Many persons, perfectly blind, have been restored to sight. Many who, until they heard of this Institution, had ceased to hope for relief, from constant disappointment in numerous trials of unavailing remedies. Several individuals, born either totally or partially blind, have been taught to feel the blessings of sight, and to enjoy the pleasure and advantage of a sense before unknown to them. Numerous cases of acute diseases of the eye, which, if neglected or improperly treated, would have inevitably destroyed that organ, have been arrested in their progress, and either perfectly or partially cured. Many individuals labouring under various harassing and distressing affections of the eyes, which have existed during the greater part of their lives, have had them either totally removed, or made less distressing and more tolerable. Often has it happened to the Surgeons of the Infirmary, on the same day to see persons with their eyes irretrievably destroyed by diseases under which they suffered in their childhood, and children with the same diseases, in a state admitting of an easy cure.

So great has been the number of patients relieved by, and such the usefulness of an institution, as yet hardly known to exist, by the mass of our inhabitants, and supported by the efforts of only a few individuals; how much more useful must it become, and of how much greater advantage must it prove to our city, when it has become a public institution, and is generally known. It does not appear at all probable that the number of patients who have applied, bears any considerable proportion to the great mass of those who labour under diseases of the eyes, and are unable to procure proper advice, who would be relieved by the institution, were its existence more extensively known.

Independently of the reasons which have been stated, sufficient in themselves to call for the foundation of an Infirmary like the one in question, the surgeons of that institution were influenced by others not less powerful. It is acknowledged on all hands, that the diseases of the eye have heretofore very little engaged the attention of the physicians of this country; and while it is known that the variety of affections to which that organ is subject, is so great, and their similarity in symptoms so considerable, as to require the constant habit of observing and treating them, to enable the practitioner to discriminate sufficiently well between them for him to arrive at any considerable success in his practice; few individuals of the profession had yet undertaken to make this branch of their science a particular study; and no institution existed, where a sufficient number of patients were collected either to give the physician much experience in the treatment of those diseases, or afford a practical school for the student to observe and become familiar with them. Since the establishment of a similar institution in London, more improvement in the treatment of these diseases, and more valuable observations on their nature and symptoms, have been made within ten years than had been done in half a century before. As a practical school of surgery then, as well a charitable institution, calculated to do much good, it is hoped the Infirmary will prove itself an useful object for the encouragement of our fellow citizens.

Influenced by these motives, the surgeons of the infirmary, assisted by the advice and countenance of Doctors Post and Borrowe as consulting surgeons, to whom they might have recourse in difficult and unusual cases, determined to open the institution, the history and progress of which have now been laid before this meeting. They have been content to bear the expense attending it, and devote their time to it, sufficiently long to carry it completely into operation, and demonstrate its utility. The continuance of its existence, and the extension of its usefulness, must now depend upon the liberality of their fellow citizens; and with confidence they rely upon it, when they recollect how often it has been extended towards useful and charitable objects.

With the advice, therefore, of many gentlemen, eminent both for their virtues and talents, this meeting has been called, and a plan arranged to make the "*Infirmary for curing Diseases of the Eye*" a public institution.

EDWARD DELAFIELD, M. D.
J. KEARNY RODGERS, M. D.

March 9th, 1821.

Statement of Deaths in the City and Liberties of Philadelphia, from the first of January, 1820, *to the first of January,* 1821, *specifying the Sexes, Ages, and Diseases of the deceased persons.*

DEATHS IN EACH MONTH.	ADULTS.	CHILDREN	TOTAL	AGES.				
Jan.	96	135	231	Under	1	Year		835
Feb.	99	97	196	From	1	to	2	307
March,	127	186	263		2	to	5	241
April,	130	101	231		5	to	10	130
May,	113	83	196		10	to	15	74
June,	126	112	238		15	to	20	101
July,	124	217	341		20	to	30	446
August,	262	321	583		30	to	40	396
Sept.	171	144	315		40	to	50	313
Oct.	178	133	311		50	to	60	202
Nov.	136	92	228		60	to	70	152
Dec.	241	110	241		70	to	80	69
					80	to	90	61
Totals,	1693	1681	3374		90	to	100	18
					100	to	110	3
					110	to	120	2
				Total,				3374

The above mentioned Deaths were caused by the following Diseases and Casualties, viz.

Apoplexy, - - -	44
Abscess, - - -	17
Asthma, - - -	11
Atrophy, - - -	19
Angina Pectoris, - -	9
Apthæ, - - -	2
Aneurism, - - -	2
Burns, - - -	14
Consumption of the Lungs,	446
Convulsions, - - -	162
Casualties, - - -	21
Cholera Morbus, - -	263
Catarrh, - - -	36
Cancer, - - -	22
Caries, - - -	2
Cholic, - - -	12
Contusion, - - -	4
Cynanche Maligna, - -	2
Child-Bed, - - -	1
Carried over, - -	1088

Brought over - -	1088
Debility, - - -	162
Dropsy, - - -	77
in the Head - -	115
of the Breast, - -	17
Decay, - - -	35
Dyspepsia, - - -	7
Dysentery, - - -	127
Diarrhœa, - - -	64
Drunkenness, - - -	31
Drowned, - - -	35
Drinking Cold Water, -	1
Disease of the Hip Joint, -	1
Epilepsy, - - -	18
Eruptions, - - -	1
Erysipelas, - - -	8
Fracture, - - -	4
Fever, - - -	71
Typhus, - -	109
Carried over, - -	1971

Brought over - -	1971	*Brought over,* - -	2755
Fever Bilious, - - -	154	Inflammation of the Uterus	2
Malignant, - -	73	Insanity, - - -	20
Remittent, - -	77	Jaundice, - - -	8
Intermittent, - -	10	Leprosy, - - -	1
Inflammatory -	4	Locked-Jaw, - - -	6
Scarlet, - -	31	Measles, - - -	47
Nervous, - -	14	Old Age, - - -	48
Hectic, - -	9	Palsy, - - -	36
Puerperal, - -	13	Pleurisy, - - -	22
Gangrene and Mortification,	26	Rheumatism, - -	7
Gout, - - -	6	Still-Born, - - -	185
Hooping Cough, - -	11	Spasms, - - -	3
Hives, - - -	89	Stranguary, - - -	1
Hernia - - -	2	Spina Bifida, - - -	4
Hæmorrhage, - -	14	Suicide, - - -	4
Hysteritis, - - -	1	Schirrus, - - -	1
Inflammation of the Lungs,	106	Sore-Throat, - -	17
Liver, - - -	27	Syphilis, - - -	6
Brain, - - -	41	Scrofula, - - -	22
Bowels, - - -	39	Sudden, - - -	39
Bladder, - -	3	Tumors, - - -	9
Breast, - - -	13	Teething, - - -	4
Stomach, - -	15	Typanitis Abdominalis -	1
Spleen, - - -	1	Ulcers, - - -	7
Kidneys, - -	2	Wounds, - - -	3
Peritoneum, - -	3	Unknown, - - -	107
Carried over, - -	2755	Total, - - -	3374

By order of the Board of Health.

JOSEPH PRYOR, *Clerk.*

HEALTH OFFICE, January 1, 1821.

Of the above Deaths, there were:

Males of 20 years and upwards, - - -	955	
Ditto under 20 years, - - - -	780	
		1735
Females of 20 years and upwards, - -	740	
Ditto under 20 years, - - -	693	
		1433
Children principally under one year whose Sex is unknown,		206
		3374

Agreeably to the returns received at the Health Office from 78 Practitioners of Midwifery, there have been born, in the City and Liberties, from the 1st of April to the 31st of December, 1820.

Male Children - - - - -	1709
Female do. - - - - -	1501
Making the total amount for the nine months -	3210

[*Poul. D. Adv.*

Statement of Deaths in the City and County of New York, from the first of January, 1820, to the first of January, 1821, specifying the Sexes, Ages and Diseases of the deceased persons.

DEATHS IN EACH MONTH	MALES.	FEMALES.	TOTAL.	AGES.				
January	130	109	239	Under	1	Year		867
February	102	85	187	From	1	to	2	361
March	105	92	197		2	to	5	254
April	107	104	211		5	to	10	125
May	125	89	214		10	to	20	176
June	122	82	204		20	to	30	418
July	204	170	374		30	to	40	409
August	267	236	503		40	to	50	359
September	270	169	439		50	to	60	224
October	177	165	342		60	to	70	156
November	164	158	322		70	to	80	101
December	153	130	283		80	to	90	46
					90	to	100	17
TOTALS,	1926	1589	3515		100	to	110	2
				TOTAL,				3515

The above mentioned Deaths were caused by the following Diseases and Casualties, viz.

Abscess,	5
Aneurism,	2
Apoplexy,	54
Asthma,	7
Burned or Scalded,	17
Carbuncle,	1
Cancer,	18
Casualties,	22
Catarrh,	5
Chicken Pox,	2
Child-Bed,	20
Cholera Morbus,	34
Cholic,	7
Compression of the Brain,	1
Consumption,	625
Convulsions,	205
Contusion,	3
Cramp in the Stomach,	9
Diarrhœa,	46
Drinking Cold Water,	10
Dropsy,	116
—— in the Chest,	26
—— in the Head,	147
Amount carried over,	1382

Amount brought forward,	1382
Drowned,	42
Dysentery,	242
Dyspepsia,	4
Epilepsia,	6
Erysipelas,	1
Fever,	130
—— Bilious,	13
—— Bilious remit.	25
—— Hectic,	1
—— Inflammatory,	12
—— Intermittent,	1
—— Puerperal,	7
—— Remittent,	22
—— Scarlet,	5
—— Typhus,	143
Flux, Infantile,	169
Fracture,	2
Gout,	1
Gravel,	4
Hæmorrhage,	15
Hœmoptytis,	3
Herpes,	1
Amount carried over,	2231

Brought forward,	2231
Hives,	97
Hydrophobia,	1
Hysteria,	1
Infanticide,	14
Inflammation of the Bladder,	3
——— Bowels,	58
——— Brain,	22
——— Chest,	99
——— Liver,	22
——— Stomach,	6
Influenza,	3
Insanity,	6
Intemperance,	28
Jaundice,	19
Killed or Murdered,	3
Locked Jaw,	6
Lumber Abscess,	2
Manslaughter,	1
Marasmus,	38
Measles,	74
Menorrhagia,	3
Mortification,	11
Nervous Disease,	3
Old Age,	100
Palsy,	41
Peripneumony,	28
Carried over,	2919

Brought forward,	2919
Pleurisy,	12
Pneumonia Typhodes,	8
Quinsy,	7
Rheumatism,	6
Rickets,	1
Rupture,	2
St. Anthony's Fire,	1
Schirrus of the Liver,	3
Scrofula, or King's Evil,	19
Sore Throat,	5
Spasms,	3
Spina Bifida'	1
Sprue,	25
Still-Born,	189
Sudden Death,	37
Suicide,	15
Syphilis,	10
Tabes Mesenterical,	113
Teething,	19
Tumora,	2
Vomiting Blood,	2
Ulcers,	11
Unknown,	65
Whooping Cough,	19
Worms,	20
Total,	3515

Of the above Deaths, there were:

Men,	947	
Boys,	979	
TOTAL MALES,		1926
Women,	784	
Girls,	805	
TOTAL FEMALES,		1589
Total,		3515

REMARKS.

The City Inspector respectfully reports to the Board, a statement of the Deaths in the City and County of New York for the year 1820, amounting to three thousand five hundred and fifteen, being three hundred and twenty-nine over the preceding year.

For the first six months of the year, the city was very healthy, so much so, that the deaths, during that time, were fewer than in the same months of the former year. In July, however, diseases of a more serious character considerably increased, and continued through the succeeding months, during which period, the complaints of children that ended fatally, were above sixty more than in the corresponding months of 1819. [*Poul. D. Adv.*

In August, also, fevers became prevalent, particularly in Bancker-street and its neighbourhood, and confined their ravages chiefly to the people of colour, as the following statement will show: Of two hundred and ninety-nine deaths of fevers throughout the city, during the last six months, one hundred and thirty-eight were of those people; although it is presumed they were not a twentieth part of the population of the city at large; and of this one hundred and thirty-eight so stated, one half were reported from Bancker-street and its vicinity.

It will doubtless be felt as a happy and providential cause of congratulation to our Fellow Citizens, that amongst the visitations of the past year, we had not to experience the alarming apprehensions of malignant disease; and that whilst other cities were unhappily afflicted with its scourge, Providence had kindly protected us from an evil of so much magnitude.

***GEORGE CUMING**, City Inspector.*

City Inspector's Office, Jan. 8, 1821.

[*Poulson's American Daily Advertiser.*

Statement of Deaths in the City of Baltimore, from the first of January, 1820, *to the first of January,* 1821, *specifying the Sexes, Ages and Diseases of the deceased persons.*

DEATHS IN EACH MONTH.	MALES.	FEMALES.	TOTAL.
January	55	66	121
February	45	51	96
March	77	60	137
April	48	50	98
May	37	36	73
June	52	40	92
July	112	101	213
August	90	84	174
September	106	90	196
October	85	72	157
November	81	73	154
December	66	48	114
TOTALS,	854	771	1625

AGES.				
Under	1	Year		390
From	1	to	2	116
	2	to	5	48
	5	to	10	77
	10	to	20	113
	20	to	30	177
	30	to	40	210
	40	to	50	133
	50	to	60	107
	60	to	70	62
	70	to	80	35
	80	to	90	47
	90	to	100	9
	100	to	110	3
Still Born,	-	-	-	98
TOTAL,	-	-	-	1625

The above mentioned Deaths were caused by the following Diseases and Casualties, viz.

Asthma,	1	*Brought over,*	1097
Abscess,	2	Hæmorrhage,	2
—— of the Brain,	1	Hydrothorax,	2
—— of the Liver,	1	Hives,	1
Apoplexy,	18	Incarcerated Hernia,	1
Anasarca,	1	Jaundice,	4
Affection of the Stomach & Head,	1	Intemperance,	29
Burn,	6	Insanity,	9
Catarrh,	9	Inflammation of the Lungs,	3
Cancer,	7	—— Bowels,	5
Cramp Cholic,	2	—— Brain,	6
Casualty,	10	Indigestion,	1
Child-Bed,	20	Infantile unknown,	66
Cholera Morbus,	175	Liver Complaint,	11
Cholic,	10	Locked Jaw,	4
—— Cramp,	3	Mortification,	24
—— Bilous,	2	Marasmus,	6
Consumption,	328	Murdered,	4
Convulsions,	90	Old Age,	78
Croup,	73	Palsy,	17
Decay,	22	Pleurisy,	39
Dropsy,	43	—— Bilious,	3
—— in the Breast,	5	Quinsy,	3
—— in the Head,	8	Rheumatism,	2
Drowned,	20	Scrofula, or King's Evil,	4
Dysentery,	56	Scalded,	1
Diarrhœa,	2	Still Born,	98
Drinking Cold Water,	4	Sudden Death,	12
Epilepsy,	1	Sphacelus,	2
Fever, Bilious,	9	Suicide,	4
—— Intermittent,	5	Syphilis,	4
—— Remittent,	24	Thrush,	1
—— Nervous,	5	Teething,	20
—— Bilious Remittent,	45	Ulcers,	1
—— Scarlet,	4	Whooping Cough,	27
—— Typhus,	73	Worms,	32
Flux,	8	Unknown,	2
Gravel,	3		
		Total,	1625
Carried over,	1097		

Of the Deaths above enumerated, 488 were Coloured People.

By order of the Board of Health,

P. REIGART, *Secretary.*

HEALTH OFFICE, *Baltimore, Jan.* 5, 1821.

Statement of Deaths in the Town of Boston, from the thirty-first of December, 1820, to the first of January, 1821, specifying the Sexes Ages, and Diseases of the deceased persons.

DEATHS IN EACH MONTH.	MALES	FEMALES.	TOTAL.	AGES.				
January,	52	40	92	Under	1	Year		246
February,	33	31	64	From	1	to	2	94
March,	47	50	97		2	to	5	62
April,	36	34	70		5	to	10	27
May,	30	41	71		10	to	20	57
June,	43	34	77		20	to	30	131
July,	50	28	78		30	to	40	99
August,	58	49	107		40	to	50	94
September,	59	67	126		50	to	60	69
October,	58	67	125		60	to	70	43
November,	47	52	99		70	to	80	40
December,	42	55	97		80	to	90	25
					90	to	100	4
Totals,	555	548	1103	Ages unknown,				112
				Total,				1103

The above mentioned Deaths were caused by the following Diseases and Casualties, viz.

Abscess,	1	*Brought over,*	496
Accident,	7	Drowned,	9
Apoplexy,	10	Dysentery,	14
Bilious Cholic,	1	Enteritis,	5
Burns,	1	Fever,	3
Calculus,	1	—— Bilious,	6
Cancer,	1	—— Nervous,	5
Cancerated Uterus,	1	—— Inflammatory,	3
Casualty,	5	—— Intermittent,	1
Cholera Infantum,	8	—— Puerperal,	8
—— Morbus,	6	—— Pneumonia,	26
Cramp,	3	—— Rheumatic,	3
Consumption,	220	—— Putrid,	1
Croup,	3	—— Scarlet,	9
Debility,	4	—— Spotted,	1
Diarrhœa,	3	—— Typhus,	43
Disease of the Heart,	7	Fits,	15
Diseases unknown,	187	Fracture,	1
Dyspepsia,	11	Gout,	4
Distorted Spine,	1	Hæmoptua,	1
Drinking Cold Water,	1	Hæmorrhage,	4
Dropsy,	14	Hanging,	4
Carried over,	496	*Carried over,*	663

Brought over,	663
Hernia, . . .	2
Hepatitis. . . .	6
Infantile Diseases, . .	132
Inflammation of the Brain, .	7
Influenza, . . .	2
Insanity, . . .	2
Intemperance, . .	31
Jaundice, . . .	1
Mortification . .	7
Murdered, . . .	2
Old Age, . . .	39
Paralysis, . . .	16
Pleurisy, . . .	2
Poison, . . .	3
Quinsy, . . .	6
Carried over,	921
Brought over,	921
Rickets, . . .	1
Scalds, . . .	2
Scrofula, . . .	7
Syphilis, . . .	4
Spasms, . . .	1
Strangled, . . .	1
Strangulated Hernia, .	1
Still-Born, . . :	89
Suddenly, . . .	9
Suicide, . . .	6
Teething, . . .	3
Throat Distemper, . .	1
Whooping Cough, . .	24
Worms, . . .	3
Total, . . .	1103

N B. There were no Deaths in the Hospital on Rainsford's Island, during the above period.—The number of Inhabitants in this town, by the last Census, were 43,893.

Published by order of the Board,

THOMAS JACKSON, *Sec'ry pro tem.*

[*Poul. Daily Adv.*

Statement of Deaths in the City of Charleston, from the first of January, 1820, *to the first of January,* 1821, *specifying the Sexes, Ages, and Diseases of the deceased persons.*

DEATHS IN EACH MONTH.	MALES.	FEMALES.	TOTAL.	AGES.				
January	38	20	58	Under	3	Years		251
February	22	23	45	From	3	to	10	52
March	26	18	44		10	to	20	49
April	31	23	54		20	to	30	99
May	27	28	55		30	to	40	129
June	40	38	78		40	to	50	80
July	55	37	92		50	to	60	75
August	62	40	102		60	to	70	38
September	54	39	93		70	to	80	28
October	48	36	84		80	to	90	18
November	47	23	70		90	to	100	5
December	29	22	52		100	to	110	1
					110	to	120	2
TOTALS,	479	348	827					
				TOTAL, - - - - -				827

The above mentioned Deaths were caused by the following Diseases and Casualties, viz,

Abscess,	1
Accident,	20
Angina Pectoris,	1
Apoplexy,	11
Asthma,	6
Cancer,	3
Catarrh,	12
Child-Bed,	6
Cholic,	6
Consumption,	145
Convulsions,	32
Cramp,	1
Croup,	13
Debility,	53
Diarrhœa,	50
Dropsy,	59
Drowned,	7
Dysentery,	7
Dyspepsia,	1
Executed for Piracy,	2
Fever Bilious,	23
—— Catarrhal,	22
—— Country,	33
—— Hectic,	2
—— Nervous,	18
—— Remittent,	1
—— Worm,	28
—— Yellow,	11
Gout in the Stomach,	2
Hæmorrhage,	2
Carried over,	576
Brought over,	576
Hooping Cough,	24
Inflammation of the Brain,	1
—— —— of the Lungs,	6
Insanity,	5
Influenza,	2
Jaundice,	5
Intemperance,	10
Liver Complaint,	5
Locked Jaw,	21
Measles,	6
Mortification,	3
Old Age,	47
Palsy,	11
Peripneumony,	1
Pleurisy,	6
Rheumatism,	5
Rupture,	1
Scrofula,	2
Scurvy,	1
Sore Throat,	16
Sore Leg,	1
Spasm,	20
Stranguary,	1
Sudden Death,	7
Suicide,	2
Teething,	38
Thrush,	1
Wen,	1
Total,	827

White Males,		232
White Females,		105
	Whites,	337
Black Males,		247
Black Females,		243
	Blacks,	490
TOTAL,		827

The Consumptions were generally among Strangers, who came here for the benefit of their health.

N. B. The few cases of Yellow Fever, were of persons unaccustomed to the Climate, and who had never been a summer in Charleston before.

By order of the Board,

JAMES A. MILLER, *Clerk.*

[*Poul. Dai. Adv.*

University of Pennsylvania.—At a public commencement held on the 6th of April, 1821, the following gentlemen received the degree of *Doctor of Medicine*, viz:

NAMES.	SUBJECT OF ESSAY.
NEW HAMPSHIRE.	
J. Underwood	Cutaneous Sympathy.
CONNECTICUT.	
George Marvin	Periodical Headach.
NEW YORK.	
Fran. S. Beattie	Tetanus.
Thomas C. Dunn	Tetanus.
NEW JERSEY.	
George Haines	Gataract.
Thomas Page	Dysentery.
T. J. Van Meter	Canker.
Okey H. Costill	Chlorosis.
Henry Holcome	Marasmus.
John Brick	Traumatic Hemorrhage.
PENNSYLVANIA.	
J. M. Staughton	Mania a potu.
Benj. R. Rees	Yellow Fever.
Thos. M‘Euen	Injuries of the Head.
Edwin P. Atlee	Dysentery.
Jacob Hittell	Dropsy.
Joseph Griffith	Dysentery.
John Russell	Dysentery.
James R. Speer	Bilious Colic.
Ezekiel C. Cook	Cholera Infantum.
Samuel Freedley	Hepatitis.
Richard Wilson	Tic Douloureux
James H. Ewing	Amaurosis
MARYLAND.	
William Plater	Phlegmasia dolens.
Stephen White	Dysentery.
William L. Jones	Epilepsy.
William Gray	Phlegmasia dolens.
Christopher Stoddert	Dysentery.
James A. Shorb	Menstruation.
VIRGINIA.	
Rd. J M‘Kim Holiday	Fungus of Antrum Maxillare.
Richard Short	Cholera Infantum.
John Hendree	Puerperal Fever.
Wm. M. Maxwell	Gastritis.
Charles C. Byrd	Secale Cornutum.
Charles Sturdivant	Amenorrhœa.
Robert E. Taylor	Cynanche Trachealis.
R. T. Colston	Menstruation.
Edward P. Scott	Menstruation.
Isaac Telfair	Hæmorrhoids.
Lang C. Rives	Oil of Turpentine as a remedy.
L. G. Coleman	Cynanche Trachealis.
J. O. Christian	Dysentery.
James Somerville	Experiments on Absorption.
Samuel C. Snyder	Cynanche Trachealis

H. W. Bramham	Dyspepsia.
Henry E. Shore	Dysentery.
Thomas Old	Dysentery.
Wyatt Christian	Peritonitis.
Geo. Claiborne	Bilious Disease of King William County, Va.
Richard W. Royster	Leucorhœa.
Theo. A. Carter	Atrophia Ablactatorum.
William Stith	Digestion.
Robert H. Cabell	Pleurisy.

NORTH CAROLINA.

J. C. Skinner	Hydrothorax.
L. H. Coleman	Typhus.
Isaac N. Jones	Typhus.
Wm. W. Stewart	Pneumonia Typhoides.
John S. Jackson	Schirro-Cancer of Uterus.
Isaac Pipkin	Phthisis Pulmonalis.

SOUTH CAROLINA.

Edward Cuthbert	Hysteritis.
Wm. S. Price	Dysentery.
Thomas Smith	Enlargement of Prostrate Gland.
Wm. F. Lee	Dyspepsia.

GEORGIA.

Richard Banks	Hydrocele.
Cullen Lockett	Hepatitis.

TENNESSEE.

Wm. W. Lea	On Fever.

MISSOURI.

Geo. P. Todson	Chorea Sancti Viti.

At the same time, the following gentlemen received the degree of *Master of Pharmacy.*

John Hart, No. 8, South Second street.
John White, No. 82, North Front street.
John Y. Bryant, No. 27, Market street.
Robert Milnor, No. 161, South Second street.
Anthony Ecky, No. 53, South Seventh street.
Thomas Cave, No. 45, Market street.
Charles Marshall, jr. No. 310, Market street.
Christopher Marshall, No. 19, North Fourth street.
Mordecai Y. Bryant, No. 241, North Second street.
Mordecai L. Gordon, No. 58, North Second street.
James D. Rooney, S. W. corner of Green and Second streets.
Charles Treichel, No. 93, Walnut street.
George F. Garretson, corner of Race and Fourth streets.
David B. Ayers, No. 164, North Third street.
John Stitt, corner of Race and Sixth streets.
William Poole, No. 66, North Second street.

J. R. COXE, *Dean of the Faculty.*

THE
ECLECTIC REPERTORY
AND
ANALYTICAL REVIEW.

NEW SERIES.

Vol. XI. JULY, 1821. No. III.

SELECTED PAPERS.

Observations respecting the Nature and Origin of the common Species of Disorder of the Spine: with Critical Remarks on the Opinions of former Writers on this Disease. By Edward Harrison, M. D. formerly president of the Royal Medical and Royal Physical Societies of Edinburgh, &c.

Of all the maladies by which mankind are assailed; none is more afflictive and distressing to relatives, or more deplorable and mortifying to the sufferers themselves, than spinal distortion. Persons so affected become objects of neglect or aversion; and, being rendered unfit to discharge with propriety the several duties of life, they remain burthens upon their friends. To a generous mind nothing can be more painful and humiliating than to feel that in him the chief purposes of existence have been defeated, and that he is doomed to consume his days in wearisome inactivity, or in unproductive occupations.

That such must be the necessary consequence of this disease will be evident, if we take a survey of the important offices of the spine, and of its influence over the complicated functions of the thoracic, abdominal, and pelvic viscera. Curvatures in the cervical bones produce numbness and paralysis of the arms. Injuries received in any part of the spine induce loss of sensation, and of power of voluntary motion in the lower limbs. Different internal organs are made to participate, according as the malady is seated higher or lower in the back. Pressure from dislocation of the cervical vertebræ impedes deglutition and respiration, by reducing the diameter of the œsophagus and trachea, as well as by disturbing the action of their muscles and nerves. Diminished capacity of the chest, the unavoidable consequence of its deformity, gives rise, by displacing or squeezing the enclosed parts together, and preventing the convenient exercise of their functions, to palpitations of the heart, to dyspnœa, cough, and various distressing perceptions, which are followed, in process of time, by organic derangements of the heart and lungs, by consumption, asthma, hydrothorax, and other chronic disorders. When the luxated dorsal vertebræ compress the spinal cord, there is generally a constrictive uneasiness about the stomach, and a depraved secretion in some of the abdominal organs. Bony distortions of the thorax mechanically force the liver, the stomach, and the contiguous viscera, out of their natural places: hence arise painful sensations in them, and irregularity in their functions. The impediments thus created are followed by organic mischief in the parts, which terminates at length in the most distressing complaints. A displacement of the lumbar and sacral bones leads in the same way, to very obstinate affections of the bladder, rectum, uterus, and external genital members.

Till the true nature of the disorder has been discovered in these cases, the most discordant opinions are advanced by the faculty, and the patients are tortured by the most opposite practices. A malady which is attended with the most disgusting appearances, and produces such a variety of obstinate symptoms, cannot be too soon or too carefully resisted. A vigorous opposition to the very dawn of the complaint is of greater consequence, because no effectual means have hitherto been attempted to remove the deformity, arrest its progress, or avert the maladies which proceed from it. In order to show the truth of these remarks; and prepare the reader for a more successful method of cure, I propose to give a short account of the principal writers who have delivered their sentiments upon this disorder, their respective opinions, and the different practices which they have employed to subdue it.

Society is under great obligations to the late Mr. Pott, for calling the attention of his brethren to an investigation of the causes and treatment of one of the most obstinate and distressing complaints to which the human frame is exposed. This subject, though much agitated in the early ages of mankind,* had been unaccountably neglected in modern times. Mr. Pott

* See Galen, Avicenna, &c.

brought it again before the public, in his valuable Remarks on Palsy of the Lower Limbs.* So much deference was paid to his appeal, that he had the satisfaction immediately to succeed in rescuing several miserable victims out of the hands of unfeeling and rapacious quacks, who had till then engrossed to themselves the whole care and management of these unfortunate sufferers. The eminent station of this accomplished surgeon enabled him to treat many patients, and enrich his Remarks with several dissections of persons who had sunk under the complaint.

"The true cause of the disease," he observes, "is a morbid state of the spine, and of some of the parts connected with it; which distempered state of parts will, upon careful inquiry, be always found to have preceded the deformity some length of time." "A morbid state of parts previous to deformity, caries, or curve, must be allowed: every complaint of the living, and every appearance of the dead, prove it beyond contradiction or doubt. All the general complaints of persons afflicted with this disorder will always, upon careful inquiry, be found to have preceded any degree of deformity, to have increased as the curve became apparent, and to have decreased as the means for relief took place. The pain and tightness about the stomach, the indigestion, the want of appetite, the disturbed sleep, &c. gradually disappear, and the marks of returning health become observable, before the limbs recover the smallest degree of their power of moving."

"That this curvature, which is always from within outward, is caused by the erosion or destruction of part of the body, or bodies, of one or more of the vertebræ; by which means that immediately above the distemper and that immediately below it, are brought nearer to each other than they should be; the body of the patient bends forward, the spine is curved from within outward, and the tuberosity appears behind, occasioned by the protrusion of the spinal processes of the distempered vertebræ."

"That, without this erosive destruction of the bodies of the vertebræ, there can be no curvature of the kind which I am speaking of, or, in other words, that erosion is the *sine qua non* of this disease; that, although there can be no true curve without caries, yet there is, and that not unfrequently, caries without curve.' †

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* Chirurgical Works of Percival Pott, Esq. vol. iii.

† Pott on the Palsy, &c. vol. iii. pp. 427, 457, 486, 493.

These passages might be confirmed by reference to several others. Having extracted them from his last Essay on Spinal Maladies, it is reasonable to conclude that they contain a faithful record of his latest sentiments on the subject. Had any subsequent change of opinion taken place, it would doubtless have been recorded in the "Notes and Observations" of his respectable editor and relative, Sir James Earle.

It appears from these extracts, and from the spirit of Mr. Pott's writings, that in his estimation, caries formed a necessary and essential part of this formidable malady. We shall take another opportunity to prove that paraplegia can appear in its most complete form, independently of caries; and it is equally certain that caries of the vertebræ* is frequently unaccompanied with paraplegia.

We are instructed in the foregoing passages, that spinal complaints affect three different structures,—the bones, ligaments, and cartilages. The last are brought to participate during the progress, and cannot therefore be allowed any share in the original formation. Though Mr. Pott always found disease in the "ligaments,"† and "sometimes in them without any apparent affection of the bones,"‡ he unaccountably overlooked them, and limited his curvative indications to the morbid state of the bones. In so doing, he reasoned upon a narrow basis. Admitting his own statement in its full extent, I think we are still bound to pay some regard to the ligaments. It however appears, from later dissections, that the vertebral bones are not always enlarged, or otherwise disordered, even when they are accompanied with a greater or less degree of deformity and crookedness of the spine.§ Many skeletons, showing lateral, posterior, and anterior curvatures, may be seen in the anatomical museums; several of them so exceedingly mis-shapen, as to leave no doubt as to their having occasioned death, by interfering with the functions of the spinal marrow, the thoracic and abdominal organs. In some, the vertebral bones and cartilages show no other signs of disease than such as arise from unequal pressure: they are hard, firm, sound, and, where free from pressure, are of the natural size. In order to form a curvature, the bones and cartilages must necessarily be fuller on the outside and compressed on the inside. The bones are even unnaturally separated in some parts of the external bow, yet nothing like ulceration had taken place.

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* Lieutaud, Morgagni, *Lond. Med. Observat.*, De Hæn, Stork, Bacchinus, Lecat. Aubertus, Blanchard, Hildanus.

† Pott, vol. iii. p. 427, 428, 438.

‡ Vol. iii. p. 482.

§ Vol. iii. p. 483.

According to this view of the subject, we must direct our attention to some other tissue to discover the true cause of spinal complaints; and I am of opinion that we shall find it in the connecting ligaments, "which seem to have lost part of their power of holding the bones together."* These get relaxed, and suffer a single vertebra to become slightly displaced. The column now losing its natural firmness, other bones begin to press unduly upon the surrounding ligaments; they, in turn, get relaxed and elongated, by which the dislocation is increased and the distortion permanently established. The direction becomes lateral, anterior, or posterior, according to circumstances; but the malady has in every instance the same origin, and requires the same mode of cure.

It appears to me that, when the spinal trunk gets too infirm to maintain the weight of the head and shoulders, the distortion inclines to the lateral form, being encouraged to take that direction from the resistance given by the superior spinal ligament. The anterior or internal curve, as far as my experience extends, has always been confined to the lower cervical and upper dorsal, or to the lumbar vertebræ. The spine is depressed in both instances, appearing to have sunk under and been crushed downwards by an oppressive and overwhelming burthen. When it arises, in a weakly constitution, from the exertion of pulling, lifting, or carrying, the protrusion, from the force employed, is nearly backward; and thus is laid the foundation of the posterior or outward curve. This is the simple and real origin of our spinal deformities, except in some rare instances, where they begin in the vertebral or cartilaginous structure. On this principal we can easily understand why people so often recover from spinal affections, and carry about with them the visible effects for many years. If the primary mischief begun in bone, as Mr. Pott teaches, or in cartilage, according to others, I think the affection would be very seldom cured, either by the unaided efforts of nature, or the best assistance of the healing art. "No degree of benefit or relief, nor any the smallest tendency towards a cure, is to be expected until the caries be stopped; and the rotten bones have begun to incarn: the larger the quantity of bones concerned, and the greater degree of waste and havoc committed by the caries, the greater must be the length of time required for the correction of it, and for restoring to a sound state so large a quantity of distempered parts."* When any thing like this degree of caries and rottenness occurs in the living body, the matter generated can never be absorbed. In defiance of the best efforts of the constitution, it will most certainly burst forth and lay the foundation of very tedious, if not fatal, drains from the back, groin, thighs, or hips.

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* Pott, vol. iii. p. 438.

The practice of Mr. Pott arose, by an obvious induction, from his own premises. His object was to excite inflammatory action by caustic issues, and thereby induce anchylosis, or union among the morbid bones That such treatment is useful at an advanced period, after caries is actually formed, may be agreeable to sound practice, though it has never obtained the universal approbation of medical men. Professor Rust,† remarks, that numerous observations and long experience have proved to him that issues rarely produce the desired effect, and that they even frequently accelerate the progress of the disease in a late stage. At an early period, while the disorder is confined to ligament alone, the practice of Mr. Pott is highly objectionable, because it prevents the application of other modes better calculated to restore the sufferer to his natural figure and former health. It cannot be denied, nor do I wish to insinuate, that patients have not got well upon this plan. Caustics, by stimulating, encourage the muscles and ligaments to act more energetically, by which they sooner regain their lost tone and vigour. The curative process is further expedited by the rest to which invalids must to a certain degree submit, while smarting under the pain of caustics. In many cases, Mr. Pott found it necessary to do more than apply caustic issues: he actually confined his patients to bed or to an horizontal situation, during the greatest part of the cure; as they could not bear to remain in an upright position.‡ In all these recoveries, the subjects of them remain through life in puny health, because, the bones continuing displaced, and some of the viscera being necessarily subjected to injurious pressure, the important functions of the spinal cord are imperfectly discharged, owing to the difficulties it meets with from the altered form and direction of the medullary canal.

"The deformity remaining after recovery is subject to great uncertainty and considerable variety, as it depends on the degree of caries and the number of bones affected: in general, it may be said, that where one vertebra only is affected, and the patient young, the curve will in length of time almost totally disappear; but, where two or three are affected, this cannot be expected. The thing aimed at is the consolidation and union of the bones, which had been carious and are now become sound. This is the *sine qua non* of the cure, and this must, in such cases, render the curvature, and consequently the deformity permanent. The issues will restore the use of the limbs, but not the lost figure of the spine."

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* Pott, vol. iii. p. 474.

† Professor Rust's *Arthrocacology.*

‡ *Observations on the Cure of the Curved Spine, &c.* by James Earle, Esq. p. 28.

"That, when two or more vertebræ are affected, forming a large curve, however perfect the success may be with regard to the restoration of health and limbs, yet the curvature will, and must, remain, in consequence of the union of the bones with each other."*

It is clearly apparent, from the foregoing quotations, and the candid admissions of Mr. Pott, that he never attempted to restore the back to its natural figure. Such an happy result never came under contemplation; nor could it, consistently with his ideas, form part of the curative plan. Believing, as he did, that the mischief always began in the bodies of the vertebræ, his efforts were confined to prevent ulceration, to cure it when present, and to join the bones permanently together in their curved form by an immovable union.

Had Mr. Pott attended carefully to the incipient stage, it is more than probable he would have found that the affection generally begins in the ligaments, and passes from them to the bones and cartilages. It is of the greatest importance to keep this distinction constantly in view, because the knowledge of it leads to a marked difference in practice. At this period, the complaint, according to my experience, is more certainly curable than many others; and, what is most encouraging, *the spinal column is made wholly to recover its natural form and powers.* Instead, therefore, of sustaining the miseries of an infirm constitution for the rest of life, and carrying deformity into all companies, the individual returns into society in as perfect health and shape as if he had never been afflicted.† That such has been the pleasing result of the new method, is abundantly proved by experience, and can be confirmed by many living witnesses. Had the disorder, in any of these examples been attended with caries, very different must have been the result. The complaint, instead of submitting to the means employed, would either have gradually increased, or, had a cure been at last obtained, there would, for obvious reasons, have been no reduction in the tuberosity. The inevitable consequence must have been a mis-shapen form, and its attendant evils.

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* Pott, vol. iii. p. 478, 491.

† This subject will be prosecuted in successive essays, till the author shall have fully explained his ideas of the disorder and its treatment.

A cure conducted agreeably to the foregoing principles leaves the patient in good health, and in the enjoyment of his natural shape. Where it has been produced by issues, how different is the result! In such instances, the curvature, and consequently the deformity, remain permanent.

" These observations,'* says Sir James Earle, " and others of the same tendency, added to the many melancholy instances which I have seen after a cure has been effected by issues alone, had long obtruded unpleasantly on my recollection. Prolonging life merely to lengthen out a miserable existence, and enable a wretched being to crawl a little longer on the earth, appears very unsatisfactory, and stopping short, if the idea be indulged, that, by any assistance from art, more may be done. I have often thought it would be a most happy circumstance could we go a step further, and *cure the deformity so well as the disease;* for, besides the disgusting appearance of the crookedness which remained, want of health, debility and inactivity, usually accompanied it: and another very material consequence resulted from it,—namely, that the largeness of the remaining curvature rendered the spine mechanically weak; which, probably, being added to a tendency to the same softness of bones as was the foundation of the original malady, was the efficient cause of the disease being liable to return. This was a very strong and additional reason why the improvement of the form of the spine should be equally the object of our attention with the cure of the disease."

It does not excite surprise that Mr. Pott, chiefly conversant with the worst and most obstinate cases, was led to believe that the disorder always began in the bones. These were, as he thought; enlarged, and pressed upon the cord. Having been induced, for reasons which he has not fully explained, to abandon this opinion, Mr. Pott did not afterwards attempt to account for loss of motion in the limbs. He contented himself with asserting that it bore no resemblance to the true paralysis of the same parts. Sir J. Earle, in his anxiety to supply the defect, ventured to go no farther than to revive the discarded opinion of his preceptor. I mention this circumstance as a proof that little progress had been made in the pathology or treatment: the great authority of the master seemed for a time to over-awe and bear down opposition.

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* *Observations on the Cure of the Curved Spine, &c.*

One of our latest writers imputes the disorder to pressure from an inflammatory increase of bulk in the fibro-ligamentous substances interposed between the vertebræ. He was induced to give up the opinion of Mr. Pott, because bony enlargements of the spine are seldom found in the dead body.* We have little difficulty in joining our testimony to that of Mr. Copeland, in cases of external violence. It is, however, uncertain whether, in these instances, the inflammation commences in bone, cartilage, or membrane. The species to which I wish to draw attention, makes its attack so insidiously as not to be discovered till a long time after its invasion. It exhibits none of the local characters of inflammation, nor is it accompanied with pyrexia. This, which is the common variety, seizes upon relaxed fibres, or persons accidentally debilitated. I am enabled, from the treatment of many such cases, to assert that, they are wholly unconnected with inflammatory diathesis, and very seldom originate in a morbid condition of the vertebræ.

In order to understand the true origin and injurious effects of these disorders, we must premise a cursory survey of the operations which the spinal column and its contents are destined to perform in the living animal. The nine or ten pairs of nerves which issue immediately from the brain, seem to be chiefly occupied with conveying perceptions to the sensorium commune. The thirty-nine or forty pairs which arise out of the spinal marrow, communicate the power of feeling and voluntary motion to the limbs and muscles of the trunk and head. They, in conjunction with the ganglions and great sympathetic nerve, supply the sanguiferous system, the thoracic and abdominal viscera, with the principal share of their nervous influence. By experiments performed upon living animals, we learn that these several organs continue to execute their appropriate functions long enough after all connexion with the brain has been destroyed by decapitation, to induce us to believe that they derive their predominant energy from a different source. This seems to be the spinal marrow; for, when it is removed, the abdominal and thoracic organs soon cease to act. We are therefore led to conclude, that, although the animal functions are performed by the brainular nerves, those of organic life, or such as are only intended to support the machine, are executed by the spinal nerves. In this view of the subject, an healthy disposition of the spine is indispensable to the well-being of the individual. That the inference rests upon experience we shall be able to prove; by taking a review of the principal symptoms which occur in this disorder. When it affects the superior cervical bones, deglutition is impaired, from pressure made upon the cervical nerves in their course to the pharynx and œsophagus. For the same reason, a dry teazing cough and difficult breathing are occasioned by pressure upon the nerves in their way to the larynx and trachea.

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* Copeland on Diseased Spine. Gortz *de Morbis Ligamentorum*

Projections in the cervical bones affect the arms with numbness, debility, spasmodic twitchings, and paralysis. They also produce uneasiness in respiration, with palpitations from slight causes. In the dorsal vertebræ, they induce a girding sensation over the stomach, as if it were tied with cords. There is also indigestion, and oftentimes vitiated appetite. The secretion of bile becomes diminished, the countenance looks sallow, and the patient labours under many symptoms of jaundice. The belly is obstinately constipated, and the rectum refuses its office. The feces are often slimy, whitish, or clay-coloured. He gets feverish, is restless, emaciated, and affected with many symptoms which resemble consumption. The kidneys secrete little urine, and the bladder loses its expulsive faculty. In whatever part of the back the curvature is situated, the lower limbs are apt to be affected. Slight pressure upon the spinal cord produces debility and fatigue in walking. The legs cross each other; the patient is liable to stumble, and cannot go straight to any point. Greater pressure occasions muscular spasms, numbness, restlessness, and clammy sweats. A still greater pressure produces inability of motion, and complete paralysis of the limbs.

The numerous, obstinate, and complicated maladies enumerated above, are truly appalling. They exhibit spinal complaints in a new light, and claim for them an attention which they have not hitherto received. Whether we consider them as giving an unseemly appearance and laying the foundation of delicate health, or regard them as the fruitful parent of many other formidable disorders, the subject is worthy of the most rigorous investigation. Happy will it be for our contemporaries and successors, if a complaint almost universally prevalent in the middle and higher classes can be subdued so as to leave behind it no vestige of its former existence. In order to accomplish the object, we must endeavour to make out the cause, by tracing the different snd apparently unconnected symptoms to their true source. Perplexing as the inquiry may seem at first sight, we are inclined to believe that it admits of explanation upon anatomical principles. In the natural form of the back, the nerves meet with no impediment in their passage from the cord through their proper foramina in the several vertebræ. Distortion of the spine produces an alteration in the canal under it, and the vertebral holes are necessarily forced into unnatural directions. In consequence of these changes, the tender substance of the cord gets pressed against the hard sides of its sheath. The nervous filaments which issue from it, having to travel over a longer course, become unduly stretched, and encounter angles and projections in their way through the bony holes of the vertebræ, by which their energies are impaired, interrupted, and morbidly affected. We have already shown that the spinal nerves have been traced to all the abdominal and thoracic organs, to the sanguiferous system, to the upper and lower extremities; also to the trunk of the body, the neck, and outside of the head. When we contemplate this distribution upon anatomical and pathological principles, we cease to be surprised that luxation of the vertebræ should produce such an endless train and succession of perplexing symptoms. The extensive range of the spinal nerves, and momentous offices they are destined to perform in the animal fabric, afford an easy solution of our difficulties. Not that all the symptoms and sufferings enumerated were ever encountered by any individual.

It has been already declared that the symptoms vary according to the situation of the curve. Organs supplied with nerves from a higher part of the spine than the seat of disease, are seldom affected. In slight cases of pressure, even the thoracic and abdominal members, which derive their nervous influence from below the distortion, are but little disturbed. The symptoms, in all these instances, are chiefly confined to the lower extremities and the viscera which receive their nerves immediately from the spinal curvature. In order more clearly to explain this part of our subject, we must premise, that the neck consists of seven flexible vertebræ; the back contains twelve, and the loins five. From each of these vertebræ issues a pair or bundle of nerves; one portion of which diverges to the right, another towards the left side, and the remainder run into the body. From the os sacrum arise five more pairs of nerves. It follows from this calculation, that thirty-nine pairs, or seventy-eight nervous cords, each including many distinct filaments, originate in the spinal marrow. Having passed through as many proper holes in the vertebræ, they seperate into minute fibres, and are distributed over the greater part of the body, to regulate and control the most useful and necessary functions of animate beings. When any of the vertebræ become displaced or too prominent, the patient experiences inconvenience from a local derangement in the nerves of the part. He, in consequence, is tormented with a train of nervous symptoms, which are as obscure in their origin as they are stubborn in their nature; they have therefore been justly denominated the *approbia medicorum.* A sedulous examination into morbid anatomy having enabled us to disclose the latent sources of other ailments formerly concealed in impenetrable darkness, we may look forward with confidence to a similar result with regard to several nervous complaints, by directing inquiry to the spinal column and its delicate contents.

According to this view of the subject, the obvious indication for the cure of spinal affections consists in restoring the displaced bones to their natural situations, that the spinal cord and its nerves, relieved from injurious pressure and disturbance, may be re-instated in their former abilities. In all the cases hitherto treated agreeably to these principles, the success has been complete. The effected organs to which they run, being no longer under the influence of diseased nerves, gradually recover their healthy state and proper functions.

Mr. BAYNTON, having being frequently disappointed in the cure of these complaints by treating them according to the ordinary modes, was led to devise another course. He has favoured us with his practice in twelve spinal cases: of these, one died; eleven recovered and regained the use of their limbs. The process took up from seven to fifteen months, and the projection was reduced in every instance; in some it is asserted to have been removed. He imputes the want of success, where his treatment failed, to previous anchylosis of the displaced bones. These cases, partly drawn up by himself, and partly by unprofessional friends, are not sufficiently detailed and circumstantial to enable us to form a clear and satisfactory opinion either in regard to the process adopted, its success in reducing the enlargement of the back, or the degree of constitutional health to which the patients were afterwards restored. In all these particulars the treatise is very defective and unsatisfactory. We are, however, under great obligations to the candid author for making us acquainted with a plan which promises to be extremely advantageous in the management of these and other obstinate complaints. It consists in placing the patient horizontally upon a firm and unyielding mattress, where he is to remain constantly recumbent during the whole process. He is not accommodated with a pillow to support the head; nor is he to be moved in the least, for the most necessary occasions. All fears of the health suffering under this mode have been happily removed, by the successful issue of the different trials. In every case where it has been properly conducted, the patient soon became easy, cheerful, and regained his rest. Appetite and digestion improve under the confinement. In general, there is increase of flesh, and a marked improvement of countenance.

The intention of the plan is to afford the "softened bones of the vertebræ" an opportunity for recovery, and make themselves able to support the weight of the parts above. So long as the column remains perpendicular it is capable of bearing considerably more weight than after it has become oblique. In order to restore the strength of the spine, the person is to be laid flat, to give the "softened bones of the vertebræ" a better opportunity to recover themselves. Until the enfeebled spine is relieved from its natural load it cannot get tone, because the weight of the head and shoulders prevents the benefit to be expected from any mode of treatment. A system of resting will accomplish cures after the failure of drains and machinery. It may be observed, that Mr. Pott, though he takes little or no notice of the matter, thought it necessary to confine his patients in bed, or the horizontal posture, during the greatest part of the cure, as they could not bear to remain in an upright position.* The length of time required to produce the cure, varies, as we have already stated, from seven to fifteen months. At the end of the limited period, the patients were allowed to rise and take exercise, according to their ability. We have not been informed by the author of any relapses, but such occurrences are asserted to have happened from other quarters. They were probaly owing to the want or neglect of proper directions in regard to the care and precautions which should be observed for some time after the reclining method has been discontinued. No means were used to remove the tenderness and pain of the back. These were soon subdued by rest alone. In no instance were external applications wanted. Internally, the liquor calcis muriatæ was administered, to increase and consolidate the ossific process. Besides this remedy, bark, and medicines to obviate costiveness, were also employed. It is difficult to say how long the resting should be continued; nor can we lay down any rules with confidence till we have had greater experience. In the slightest cases, the recumbency must be continued five or six weeks after the removal of all tenderness. Where disorganization of the bodies of the vertebræ has taken place, the rest must be prolonged two or three months after every inconvenient symptom has disappeared.

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* See Sir James Earle's *Observations on the Cure of the Curved Spine.*

Such is the plan recommended by Mr. Baynton. It consists, as we have already observed, in placing the patient horizontally upon a mattress, without bolster or other elevation, and continuing the same position till the spine shall have recovered firmness enough to support the head, shoulders, and chest. This is the whole object contemplated, and such are the means employed to attain it. When the process is finished, no measures of precaution are advised to prevent relapses. The patients arise from their couch, and thus ends the treatment.

Mr. Earle, laudably solicitous to maintain the high character of his deceased ancestor, has for that purpose voluntarily entered the field of controversy with the Editors of the Medical and Surgical Journal.* In the review of Mr. Baynton's essay,† they had taken occasion to extol his "humane" method, compared with the severity of Mr. Pott's treatment of spinal complaints. In order to bring the matter fairly before an impartial public, Mr. Earle was led to analyze Mr. Baynton's twelve cases, published in favour of the resting process, and to accompany each of them with his own remarks. He reports that only three of them are of the description alluded to by Mr. Pott; and in them the previous employment of caustic issues had, he thinks, removed the diseased condition of the bones. The merit of the resting-plan was, therefore, limited to expedite the cure; for which intention he thinks it well adapted, where "softness prevails in the bones." In all the remainder, there was either no disease of the back, or it consisted of a muscular affection only. In confirmation of this assertion, he introduces accounts of three cases which fell under his own management. In these the spine was greatly bent, and the lower extremities more or less affected. One appeared to arise from hydrocephalus internus. The second occurred to a military officer.

"On the day after exposure to great fatigue and being wet through for many hours, he had an attack of fever, and, on attempting to walk, he found stiffness in his legs and inability to move them. Soon afterwards he was incapable of expelling his urine, and his feces at times passed involuntarily. That these symptoms gradually increased, until the lower half of his body was completely palsied." He had suffered four years when Mr. Earle was consulted. He was miserably helpless. His lower extremities were cold and benumbed, and he had lost all power of directing his steps. The whole vertebral column was slightly arched in the form of a half hoop, but no part was unnaturally exuberant. When supported, he could raise his body from its bent shape to an upright position. The form of the back, when reclined, was quite natural. This circumstance, contrasted with subsequent experience, induces me strongly to believe that there was no disease whatever in the vertebral column; and this arching of the body was purely the effect of deficient muscular action, rendering the muscles of the back incapable of supporting the weight of the head and trunk; and, from the result of the examination which I was enabled to make a short time after, in a case which I shall presently relate, I am firmly of opinion that the deficient nervous energy in this case depended either on some morbid affection of the brain or its membranes, which rendered it incapable of transmitting its influence to the extreme parts of the body, or some diseased affection of the medulla spinalis, wholly independent on any disease in the vertebræ."

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* Vol xi. No. 41, *Edinburgh Medical and Surgical Journal.*

† Vol. x. No. 39.

The third patient was a soldier, whose constitution had suffered from previous residence in hot climates. "In addition to the curved back, he had deficient muscular power in the lower limbs. There was a numbness and irregular action in the muscles of the fore-arms and hands: he was incapable of feeling any minute objects, and would often let things fall from his hands. On dissection, the liver, spleen, and lungs, were found to be diseased. "As I was most anxious to ascertain the state of the vertebræ and medulla spinalis, I did not pay much attention to these appearances, and, having cleared away the viscera, proceeded to make an accurate inspection of the vertebral column; and, no disease being apparent externally, I removed all the bodies of the vertebræ, by sawing through the rings between the articular processes. By this plan, I obtained a complete and very satisfactory view of the spinal marrow; but still no cause for the symptoms presented itself, and I was left to conjecture respecting the nature of the malady. On examining the head, however, the source of the mischief became apparent. The cellular structure of the pia mater was loaded with fluid, and the tunica arachnoidea was of a milky colour and thickened, especially at the base of the brain, where it was firmly connected with the pia mater, forming together a tough dense membrane. I am aware that to many this may appear an insufficient cause for the violence and extent of the symptoms; but, having paid considerable attention to the morbid anatomy of the brain, and well knowing the infinite variety of symptoms produced in different individuals by the same morbid alteration of structure, I am satisfied in my own mind that all the phenomena were referable to this diseased state of the membranes,"

Whatever difference of opinion may arise in other respects every one will, I think, admit Mr. Earle's cases to be legitimate examples of paraplegia, though certainly not of the variety described by Mr. Pott.

The more we become acquainted with spinal pathology, the stronger is our conviction that paraplegia ought to constitute a generic term, and include under it numerous species. Of these, one, and that comparatively of rare occurrence, originates in a carious state of the bones. In others, it takes place in the progress of the complaint; but in the greater number it never appears, though the health be generally impaired and destroyed by the mischievous effects impressed upon the constitution. We find the most essential signs of the disorder clearly displayed in Mr Baynton's case. There is debility, numbness, a pricking sensation, and torpor of the lower extremities, with incapability of directing the motions. In some, the upper limbs were also affected, as well as the internal viscera, giving to the malady a greater range of morbid action.

These phenomena having by all physiologists been referred to the nervous system, I do not think it necessary to produce any arguments in support of an admitted doctrine. The only question for discussion, is the seat of paraplegia. Is it ever in the brain, or is it always in the spinal marrow? In order to arrive at a more satisfactory conclusion, we may premise that none of the cerebral nerves, with the exception of the eighth pair, and perhaps the great sympathetic, descend below the throat; and the spinal marrow is united to the brain by means of the medulla oblongata. The cerebral nerves are principally employed to convey impressions to the sensorium commune, and transmit the determinations of the will to the muscles of voluntary motion. By means of the spinal nerves, the offices of secretion and excretion are performed. They regulate the circulation of the blood, and impart energy to the extremities of the body. These nerves are chiefly independent of the brain; for, if the head be cut off, in certain warm-blooded animals, and respiration artificially carried on, the trunk will live for many hours; but, destroy the spinal marrow, and the animal dies almost immediately. We are led from these experiments to conclude, that the nerves of the brain and spinal marrow discharge separate and distinct offices in the animal economy, though the brain certainly exercises its control, through the spinal cord, over the voluntary muscles. The involuntary motions are executed by the spinal cord alone, and are wholly independent of the brain.

The difference between the two orders of nerves is very apparent in the paralysis which they occasion. Hemiplegia is confined to one side; paraplegia equally affects both. In the former, the diseased muscles are more flabby, soft, and unresisting, than in the latter. The mental faculties are always disturbed in hemiplegia; in paraplegia they remain free. The latter complaint deranges some of the internal functions; but in the former they are little impaired. By paying attention to these several distinguishing characters, a clear diagnosis may generally be established between these different forms of palsy.*

If we examine Mr. Earle's first case according to the above rule, we shall find considerable derangement within the body, as well as in the lower extremities. I cannot therefore hesitate to consider it as a species of paraplegia, induced by compression of the spinal nerves. From the torpor of the bladder and rectum, together with the involuntary discharge of feces after taking purgative medicines, I am induced to place the seat of disease in the loins or sacrum. I have come to this conclusion because the nerves distributed to the rectum and bladder issue from these parts. Had the disorder occupied a higher station, some of the abdominal viscera would have participated in the complaint. I am of opinion that his fever after exposure to wet and fatigue, proceeded from an attack of inflammatory rheumatism in the loins or sacrum.

The joints, the tendinous sheaths, bursæ mucosæ, and in general all parts furnished with fibrous structure, are liable to its invasion. The tendons of muscles are often attacked, but the fleshy bellies seldom or never suffer from this complaint. We find, on dissection, a glairy fluid effused, with increased thickness and morbid enlargement of the surrounding structure.

Rheumatism seizes indiscriminately upon the vertebral joints. The back is frequently the seat, because it is supplied with strong ligaments to provide for the weight and motions of the body. It has likewise the usual articular provisions, and a tendinous expansion, the common posterior ligament of the vertebræ, enclosed within the theca spinalis. Rheumatic inflammation of these organs, by enlarging their bulk and dimensions, occasions compression upon the spinal cord, impedes its operations, and thus induces coldness, debility, numbness, loss of feeling and motion in the limbs, and the various sensations and inabilities complained of in the internal parts. In agricultural districts, rheumatism is of frequent occurrence among the labouring poor, from their being thinly clothed and so much exposed to the changes of the weather. When it invades the back, symptomatic paraplegia often supervenes in the arms or legs. Many patients of this description have been admitted into the Horncastle Dispensary, under my professional care. In some, the paraplegia was entirely removed with the primary complaint: in others, it continued to torment the sufferer during the rest of life.

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* The diagnostic signs will be more fully considered in a future essay.

It is for these several reasons, and from the suddenness of the attack, that I feel inclined to impute the origin of Mr. Earle's first case to lumbago, rather than any other cause. Had the inflammation invaded bone or cartilage, I think its effects would not have appeared so early as the following day: I therefore coincide in the opinion that the vertebræ and cartilages were wholly untouched. The disorder in process of time became chronic, and was then attended with muscular debility. Still I think it began in membranous parts, and extended from them to the muscles. That the articulating organs of the vertebræ were relaxed and preternaturally elongated when Mr. Earle was consulted, must, I think, be conceded, from the arch or "half-hooped form" of the back in an erect posture, and its becoming straight upon lying down. To me it appears altogether impossible to distort the bones of the vertebral column in the manner described, without stretching and hurting some of the articulating connections. So long as they remain firm and unyielding, the vertebræ continue fixed; but when they begin to lengthen, the vertebræ as certainly show a disposition to move out of the line: I therefore think it much more probable that the affection was situated in the ligaments than the muscles, especially since fibrous texture possesses little inherent contractibility. When once over-stretched, it recovers its lost tone slowly and with difficulty. In this respect it differs from muscles, which admit of considerable contraction and relaxation, without injury to their functions. The bent figure of the vertebral column, and consequent extension of the spinal marrow, would account for the symptoms under which the patient laboured when Mr. Earle saw him; but the commencement of disease on the morning after long exposure to wet and fatigue, cannot be referred to a circumstance which had not then taken place. The subsequent appearance of the same complaint in other vertebræ, is agreeable to an established law of the animal economy. Rheumatic inflammation passes successively from joint to joint, sometimes leaving the former to invade the latter; more frequently it attacks the new organ wihout deserting the old one. It is no uncommon thing for sciatica to proceed to the knees, ankles, and superior extremities. After remaining in all of them for a certain period, it gradually disappears, or degenerates into a protracted rheumatism. It is in this way that we account for the membranes and ligaments of the back becoming so generally and obstinately disordered in Mr. Earle's and Mr. Baynton's different cases.

An objection may be raised against this explanation, because, in the second case, Mr. Earle found no disease of the spinal marrow, after viewing it by "sawing through the rings between the articular processes." It is clear from the statement, that it never occurred to his mind to examine the articulations with any particular attention; otherwise, he would have laid them open with greater care and in a different manner. His eyes and thoughts were exclusively directed to the vertebral bones, their intermediate cartilages, and the spinal cord; and, to get to the objects of research, he incautiously tore and mangled the articulating membranes with a coarse instrument. It could not be expected, after such treatment, that the parts would display any strong signs of diseased structure; and, therefore, his finding no sufficient cause for the symptoms in the spinal marrow, does not convince me that none were present in the contiguous ligaments. The advocates for pressure generally would have examined the bones, cartilages, and membranes which surround the spinal marrow or connect the parts together, under an idea that paraplegia derives its origin from disease situate sometimes in one tissue and sometimes in another.

I have thus endeavoured, in controverting the theory of Mr. Earle, to establish the phenomena on a basis ample enough to afford them support, and more conformable to the principles of the animal economy.

Dr. Baillie has also favoured us with his sentiments on paraplegia, in the Transactions of the Royal College of Physicians.* It is much to be regreted, however, that he did not superintend the dissection of a patient, whom he had occasionally visited during life, and whose case constitutes the basis of his paper: had he personally directed the investigation, I am convinced that the spinal marrow and its membranes would not, under such circumstances, have escaped the notice of a physician intimately acquainted with morbid anatomy and the general principles of his profession. "This last form of paralytic affection," (the paraplegia), he observes, "has, as far as I can judge from individual experience, increased considerably in this country within the last fifteen or twenty years, although it be very difficult to assign any satisfactory reason for it. Paraplegia in adults has been considered by most medical men as being produced by some disease, either in the bones or ligaments of the spine, or in the cravity of the spine, most commonly at the loins, independently of any disease in the brain. The reason of this general opinion has probably been, that the lower part of the body from the loins downwards is in this disease, affected with paralysis; and that, in children, a similar disease is often obviously dependant upon a morbid affection of the lumbar or some other portion of the spine. In adults, however, where there has been no accident affecting the spine by outward violence, paraplegia, I believe, depends most commonly, in a great measure, upon a disease affecting the brain itself. This opinion I have entertained for several years, and some other medical men have likewise held the same opinion. It is, however, by no means general; and the chief object which I have in view in writing this paper, is to render this opinion more commonly known, that it may either be established or be properly limited by the future observations of other practitioners."

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* Vol. vi. page 16.

The brain and its membranes, in the case recorded, exhibited strong marks of disease, though they were not, as I think, sufficiently distinguishing to account for the paraplegic symptoms. We are not informed how the mental faculties and organs of sense were exercised under the pressure of the disease, nor to what degree the feeling and motion of the arms were impaired, or in what manner the thoracic and abdomial viscera discharged their respective offices. These omissions are the more to be lamented, because, if the several functions remained undisturbed, we have little reason for imputing the disorder of the lower limbs to the cause assigned.

"A considerable quantity of water," we are told, "was discharged during the inspection from within the theca of the spinal marrow." When such an obvious source of the disease presented itself, we have surely more reason to refer the paraplegia to it, than attempt to search for its origin in the deranged structure of a distant part. We have the authority* of celebrated names for maintaining that, when a fluid is found after death both in the head and spinal tube, it sometimes commences in one part and sometimes in the other. Since, then, the effused liquor may, in the case recited, have had a two-fold commencement, it is impossible to determine, imperfectly as the inspection was conducted, where it was really formed. Had the surgeons examined the vertebral column with proper care, I think they would have discovered in it the origin of the disease and that the malady in the skull either proceeded from the spine, or was only a co-existant and unconnected attendant. We feel more grieved that the state and condition of this organ and its contents should have been overlooked, because the subject has been very little elucidated by careful dissection, and appears to be much in want of further investigation.

We have thus given a brief analysis of the works of Mr. Pott and Mr. Baynton, the two chief practical authorities on this subject, interspersing our remarks with the observations of other writers. This was undertaken with a view to communicate what has hitherto been advised and done in respect to one of the most obstinate and distressing calamities to which the human frame is exposed,—a calamity which poisons our present happiness, and deprives us of the hope of future enjoyment.

Case of Symptomatic or Hectic Fever, consequent to the Evacuation of extensive Collections of Matter, in which Stimulating Injections proved highly serviceable. By EDWARD THOMPSON, Member of the Royal College, London.

(From the London Medical Repository for March 1821.)

CASES of symptomatic, or hectic fever, consequent to the evacuation of extensive collections of matter, have been so frequently detailed; that I am perhaps to blame in transmitting the following for insertion in the valuable pages of the Repository. And yet, although we may have arrived at comparative excellence in the treatment of many diseases, it must be acknowledged that, in this, we are far from excellence, and, indeed, in a state of primitive ignorance, as to the power we possess in checking its strides, or subduing its virulency. It would appear to advance or recede, alike regardless of our efforts to hasten or retard; and if it should sometimes spontaneously depart, we are not often left the transitory pleasure of thinking that our endeavours had produced the effect. If such be the intractable nature of the complaint, any change in the treatment may be of value, should it have been accompanied with a happy result; and I am induced to offer it, not with the most distant hope of its proving of much practical benefit, but with an anxious desire that gifted individuals may turn their attention more particularly to the study of diseases of this nature, as hence improvements may be expected to arise, and some control attained over affections which, when they do take place, commonly pursue their fatal course with a certainty not to be resisted. Before commencing the case, it is necessary to premise, that the method resorted to, on which the successful issue depended, did not originate in the surgeon, but in a self-taught veterinarian, who practised his art in the neighbourhood, and who put it into effect during the absence of the medical attendant.

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*Morgag. Epist. xii. art. 9; Willis; Lieutaud, lib. iv. p. 341; Bonetus Magnetus Coiterus.

William Sheffield, a mason, residing about a mile in the country, a short time after receiving a slight injury at his work, perceived a small tumour in the back, which increased daily. It gave him little or no uneasiness, and he was enabled to continue at his employment as usual, being not much incommoded by it, except on stooping, or endeavouring to raise any thing from the ground of much weight; he then experienced a dull pain, and a peculiar sensation in the right thigh. The swelling, being of so indolent a character, did not alarm him, expecting still, by stimulating applications, in time to dissipate it; but in this he was deceived, for, instead of decreasing, it grew larger; and, after trying such means for a long period without relief, he thought it advisable to seek other assistance, and I saw him on the 12th of January 1819, twelve months after its first appearance. The tumour, when examined, was found to extend from the third lumbar vertebra to the lower part of the sacrum, and from ilium to ilium. It was soft and elastic; the integuments were much distended, not pointed at any particular part, and of an equal thickness; the skin was of a natural colour, smooth, and shining; and he could bear it touched without feeling pain; indeed, handling the swelling in any way gave him not the least disturbance. It evidently contained a fluid, which appeared to have made its way under the gluteus muscle on the right side; there was a fulness in this place; and the tumour in the back could be made tenser by pressure being applied at that part. He had, for six weeks before applying for surgical aid, been often attacked with shiverings, which continued an hour or so, and then left him; but from that time he daily grew weaker, and his appetite, which had been previously good, almost quitted him. His sleep became disturbed, and the system was rapidly giving way to the attacks of the disease; his look, which had been that of robust health, was now changed to a sickly hue; and there appeared no time for trifling, as the disease had existed too long already. The weight of the abcess had also become exceedingly troublesome, and his movements much impeded by it. He was anxious to have something done for his relief, and willing to undergo any thing to gain it. A lancet was at this visit plunged into the centre of the tumour, and an opening made just large enough to favour the escape of the matter: the plan fixed upon was the one recommended by Mr. Abernethy and Mr. Russel, viz. that of evacuating the pus as it collected in sufficient quantity, so as to effect, by this means, the contraction of the sac. Six pints of matter were discharged from the opening; the fluid from among the muscles in the buttock was pressed into the abcess, and from thence evacuated; a small piece of sticking plaster was applied; and a bandage, with compresses to the thigh, covered the whole. He was directed to keep in bed, and to avoid all unnecessary motion; a certain portion of wine was allowed him; and the bark mixture, with soda, was prescribed. He paid strict attention to whatever was desired of him, except that of keeping to his bed, on which much stress had been laid; but feeling so light and free from illness, after the abcess was tapped, he disregarded this necessary precaution; and to his attending rather to the feelings of the moment than to his future welfare, may be attributed, in a great measure, his subsequent sufferings. His appetite and strength, after the pus was let out, returned gradually; and he was a fortnight after in better health than he had been in for many months before. But these signs of amendment were soon to give place to others of a less cheering nature. He had, by the exercise he could not be prevailed upon to forego, prevented the matter from collecting in the tumour, and the opening from uniting; the dressings by this means were almost continually kept wet; and what was feared in a short time took place. The lips of the puncture began to put on an ulcerated appearance; a low inflammation spread from this to the parts adjacent, apparently affecting the integuments through their whole thickness; the skin underwent the same change, assuming a deep red colour, which extended round the ulceration in the centre, like an areola, to the very limits of the sac. As this action arose, the matter became offensive, thin, and acrid; the constitution sympathized with such local derangement; and consuming hectic, with all its train of ills, began to sap the powers of life.—There are few surgeons who are not ready to admit the futility of medicine at this crisis: their patient they see sink away, notwithstanding the most powerful drugs are exhibited; application is resorted to after application, without producing the wished for effect; till at last they find, like the sagacious Ratcliff, that instead of twenty, not one remedy remains on which dependence can be placed.—At this juncture, after bark, opiate, cordials, &c., with applications of various kinds, such as preparations of lead, fomentations, &c. had been all severally used, without any benefit being derived, and the poor man was fast declining, from the prolonged but ineffectual efforts of the constitution to cast off local irritation, the proceeding above alluded to was ventured upon, with what intention I cannot presume to answer; and it is doubtful whether the person himself knew why he employed it, or what effect it might produce. Never having an opportunity of seeing him after, I gained nothing respecting it, except that the fluid was allowed to remain in the abcess some time.

On visiting the patient the next day, he was found in a high state of fever, complaining of great headach, violent pain in his back, and unable to suffer the slightest motion, or able to bear even the weight of the bedclothes. His pulse was rapid and full; skin hot; tongue white and furred; thirst excessive; had been in the night delirious; he was now collected, but unwilling to talk much; and to all appearance was in a state of extreme danger. These symptoms could not be accounted for; as, from the state in which he was left on my seeing him a day or two before, it was impossible almost for a moment to think that such excitement could have been induced, or if so, supported,—the debility being so extreme. It was not till on particular inquiry, his wife acknowledged that the injection had been used. When the back was examined, it was found in a high state of inflammation; the skin was of a bright red colour, which extended down the thigh. The least touch gave him excruciating pain, and he was obliged to keep constantly on his face. The tumour seemed filled with fluid; but when pressed upon, nothing, except a small portion of dark-coloured liquid escaped. His linen was stained with the injection; and small undissolved grains of sulphate of copper lay on the skin, showing the solution to have been none of the weakest. The pyrexia continued without mitigation forty-eight hours; after that it slowly left him, and in three or four days disappeared, leaving him in a complete state of exhaustion. The inflammation in the back gradually subsided; he could move his limbs with more freedom; the matter put on a more healthy look than it had done since the first attack of hectic; and adhesion, from the firm feel of the integuments, appeared to have taken place. These symptoms were accompanied by an increase of appetite and of sleep; he every day gained more strength; the fever, which had been so critically put a stop to never again threatened; and the system soon cast off all disease. He was prevented using exercise as soon as he desired, from the fear of its producing unpleasant effects, the cavity not having throughout adhered to the parts below. The discharge which took place from the surface, not yet obliterated, was very trifling and of a healthy colour. A probe could be carried a little way under the integuments round the puncture, but not under the muscles of the hip; the outlet that way, large as it was, being entirely closed. In a short time, that portion of the sac which had not adhered contracted, the puncture united, and no further inconvenience was experienced. Slight absorption of the sacrum was the only consequence that ensued from the long pressure of matter which lay on the bone near twelve months. He is now as vigorous as ever, and has worked at his business above a year; enjoying excellent health, experiencing no bad effects either from weakness or stiffness of the parts, which might have been expected from the extent of the disease.

On viewing this case, the most striking circumstance that presents itself is the appearance of strength which the constitution displayed on the stimulating fluid being injected. This, when the frame seemed labouring under the most extreme weakness, is a matter of some astonishment; for it must be recollected, that the unavailing efforts of the system to subdue the local irritation had reduced the patient to the lowest apparent state of debility. If an opinion might be drawn from the phenomena exhibited in a single case, one would be prompted to say that debility has nothing to do with the original existing cause of local disease, attended by hectic fever. If what

Mr. Hunter has advanced be admitted, that hectic is owing to the parts being stimulated to produce an effect beyond their strength, how are we to account for the action of the fluid thrown into the sac? Weakness in the parts could not have been the cause, or a more excessive inflammation would not have arisen; excited by a stimulus much greater than the one already present: yet it did arise; and not only was a stop put to this weak action, but a new one induced, so much more powerful that adhesion was the consequence. Debility of the parts, if accepted, implies that more strength cannot be elicited: taking this for granted, then, a cure cannot take place without the stimulus be removed, which the weakened part is vainly opposing; and yet we see a greater excitement combated with vigour. It surely appears illogical, therefore, to say that debility can exist in a part where a power (or stimulus) double the force of the first may be immediately overcome. It would appear, then, that hectic may be produced by a peculiar action in a part, to change which, the system, is inadequate to the task,—not from debility, as this would imply a want of power to put in a stronger action, but from the want of a more active and different stimulus to enable it to take upon it new habitudes. Supposing, for a moment, the above reasoning to be correct, the inference would be, that a cure could only arise in those cases, where the action was so far increased as to do away with the diseased surface, by inducing adhesion. Our means of reducing the excited action of an inflamed cavity, whence matter has been taken, are so ineffectual, that our patients (if the *vis medicatrix naturæ* do not assist) generally sink under the disease. We cannot lower the activity of the vessels with the rapidity required to save life; and, therefore, till we arrive at this knowledge, we must seek for other methods of cure: and one of them, perhaps, although a dangerous one, may occasionally be found worth the trial: I mean that of injection. The manner in which the cavity began to assume diseased action is so strikingly illustrative of the opinion of Mr. Charles Bell, that it cannot fail to draw some attention towards the point in dispute, relative to the way such abcesses become inflamed. The irritative action spread from the lips of the orifice, and produced the fever as it advanced. If air had been the exciting cause, the whole surface would have at once put on disease; but this was not the case. Again, if air be, as Richter says, so prejudicial to the inside of abcesses, how was it that the cavity did not become sooner inflamed? It continned above a fortnight open to the atmosphere, and yet all went on well till the ulcerative process commenced.

Before concluding, I have to apologize for any prolixity I may have been guilty of, and perhaps for detailing a practice which may be trite and useless. To the first I plead guilty, but to the second I plead ignorance. I am not acquainted with any similar case in which injection was had recourse to, in an abcess so much inflamed previous to its being cured. There is a case related by the ingenious and excellent surgeon, Mr. Hutchinson, where an injection was thrown into the sac of a lumbar abcess with the happiest effect; but I do not recollect that it was employed under a state of great irritation.

Case of Pertussis. By T. W. WANSBROUGH. Surgeon, &c., Fulham.

(From the London Medical Repository for March, 1821.)

A FINE healthy child, twelve months old, was attacked with violent symptoms of pertussis. The paroxysms were so severe as to threaten suffocation. The disease had existed nearly six weeks when I was called upon to attend. Inflammation of the lungs had supervened. The child refused the breast, and was exceedingly restless and uneasy from dyspnœa. I ordered the warm bath, and three leeches to the scrobiculus cordis, purged her briskly, and ultimately continued with antimonials and expectorants. In the course of twenty-four hours from my first visit, a considerable amendment was observed, the urgency of the symptoms being very much abated. A blister to the chest closed the active measures; and three days after, the inflammatory diathesis completely subsided. The paroxysms of the cough, nevertheless, were still violent, though the frequencey of them declined with the concomitant symptoms. In short, the little patient appeared likely to conquer this formidable foe; when, unfortunately, she was accidentally exposed to a current of air, which gave her cold, and increased the cough violently during that night. I again saw her on the following morning; and, unwilling to have recourse to the former measures for her relief, I determined on applying the vapour of tar, the absence of inflammatory symptoms warranting the application. Her breathing was short and oppressed, but the difficulty appeared to arise more from accumulation of mucus in the bronchiæ than irritation. My idea was to bring the remedy in contact with the part or parts affected, and thereby expedite the effect. If therefore, the remedy were likely to prove beneficial, the fact would be proved and illustrated by ocular demonstration. I decomposed a portion of petroleum Barbadense, by dipping into it a red hot iron; the end of the common poker answered the purpose conveniently. The child was held over the vapour as it arose, observing not to let her inhale it until sufficiently diluted by a due portion of *atmospheric* air. My little patient no sooner inhaled this gaseous compound, than she exhibited manifest signs of relief. Instead of avoiding the volume of vapour as it arose from the vessel, which I feared would be the case, she willingly inhaled it, and suffered the tar to be placed almost under her nostrils. The effect was conspicuous, in relieving the pressure under which the little sufferer laboured; expectoration was promoted, and rendered nearly free from effort, by this remedy. In short, after six exhibitions of the vapour, the cough almost ceased; and without the aid of any auxiliary the child perfectly recovered.

I feel satisfied that I am indebted to the efficacy of *carburetted hydrogen* and *oxygen* for the recovery of this case. The conspicuous, and, I may safely say, the surprising effects of this remedy, strongly stimulated me to communicate them as they occurred to me, through the medium of the Repository, to the notice of the Profession; when I happily experienced the heartfelt satisfaction of preserving, by the same means, from threatened destruction, *my own child*, an infant three months old. Accidental exposure to cold produced catarrh; the breathing was short and difficult, attended with sensible accumulation in the air-tubes of the lungs, which the child was unable to expectorate. These symptoms increased rapidly. There did not exist any other excitement than the difficulty of respiration. The distress of the infant excited feelings in my breast which can only be appreciated by a parent. I had already lost one child from pertussis, in which the vapour of tar was *never thought of;* another fell a victim to hydrocephalus from metastasis: and this last appeared hastening to form an addition to the number. From her birth she was delicate—smaller, considerably, than the generality of infants at her age. Leeches were inadmissible; not only because of the absence of active inflammation, but also from the apprehension of depleting the already debilitated system. Emetics and expectorants were unavailing; the former, equally objectionable with leeches. Blisters were inadmissible, from the addition thereby of irritation to the system. Under these conflicting circumstances, my distress of mind may be easily conceived. I was led to the adoption of the warm bath; but the agitation it occasioned obliged me to relinquish all thoughts of a repetition. At length, worn with fatigue and suffering, at the end of three days, the poor little sufferer *refused the breast* in the morning; and I then concluded the termination of her distress by a fatal issue would, ere long, arrive. At this crisis, I had recourse to *tar vapour*, as mentioned in the former case. I applied it at a distance, whilst the child lay in the mother's arms. Breathing quick and short, with frequent interruption from what appeared to be accumulation in the bronchiæ. The little creature seemed revived the instant she inhaled the vapour, and made an effort to cough! Delighted at the effect, I placed the vessel nearer to her nostrils, and continued the fume for about three minutes, when a cough intervened, followed by an immediate vomiting of viscid phlegm and mucus, that nearly suffocated her. The quantity evacuated from the lungs and stomach saturated two handkerchiefs. Complete exhaustion for about a minute succeeded this operation; and, to my inexpressible joy, the little patient took the breast heartily afterwards, and sunk into a profound sleep, which lasted two hours; she awoke refreshed, and considerably relieved. Encouraged by this unexpected and happy success, I continued the application of the vapour for a week, twice in the day; when, from the decided remission of symptoms, I ceased the further use of it. The first six applications were succeeded, each time, by a copious expectoration, which always ended in an abatement of the previous symptoms.

About a month ago, my little girl again took cold, when the difficulty of breathing returned, attended by wheezing and cough. Recourse was again had to the same remedy, which procured relief the first time it was applied, by producing sickness, and a copious expectoration of phlegm and mucus. The second application was not so successful; symptoms of an inflammatory type supervening, with fever. The child being now six months old, and considerably mended in constitution, I exhibited antimonials, and applied a blister to the chest. The febrile symptoms remitted, and an amendment followed. The support which the mother had afforded now declined, both in quantity and quality; and we were necessitated to adopt another source of nourishment, but through the same medium, viz. the breast. Change of air, at the same time has, in conjunction with her nourishment, happily restored the infant to our anxious hopes. After the subsidence of the inflammatory action, the vapour was applied three or four times, and with confirmed success. The child is now perfectly well, and is gaining flesh.

Master Alfred Wallis, the little fellow whose case is recorded in the Repository, vol. xiv page 182, three months since, manifested symptoms of asthma. His father, hearing me often make mention of the success I had experienced in the application of the, vapour, in pneumonic affections, requested I would try it with the boy. He was unwilling that any active measures should be resorted to, the child having so recently recovered of phthisis. The state of the little patient was as follows: his breathing oppressed; cough frequent and violent, *without any* expectoration; each paroxysm produced suffusion of the eyes, and florid countenance. The idiosyncracy of system (hydrocephalic) led me to apprehend encephalic congestion. His rest was much disturbed by the cough. Upon placing the hand between the shoulders, and on the chest, the wheezing was very sensibly felt; and the child seemed to breathe, so to speak, as through a sieve; such was the accumulation of mucus in the air-tubes of the lungs. Desirous of affording the vapour a fair experiment in this case, it being more closely allied to the class of pulmonary affections, in which it appeared most unequivocally applicable, I commenced the trial; and my patient inhaled the vapour, diluted as in the two former experiments, from the 14th of August to the 23d of September, regularly; then every other day, and finally ceased on the 28th of October. The first eight or ten inhalations produced powerful action of the lungs; and the quantity of mucus expectorated exceeded belief; and it gradually subsided, whilst the pulmonary viscera seemed to expand, under the influence of the new atmosphere. My little patient came *voluntarily*, during the whole period, as he used to say, " to get rid of the phlegm." It is remarkable that the child gained flesh whilst under treatment. Not a single medicament of any description was exhibited to him, as I was determined to witness the unassisted effects of the vapour. He is now quite well; and when he has any " wheezing," as he calls it, a dose of tar vapour sends it away.

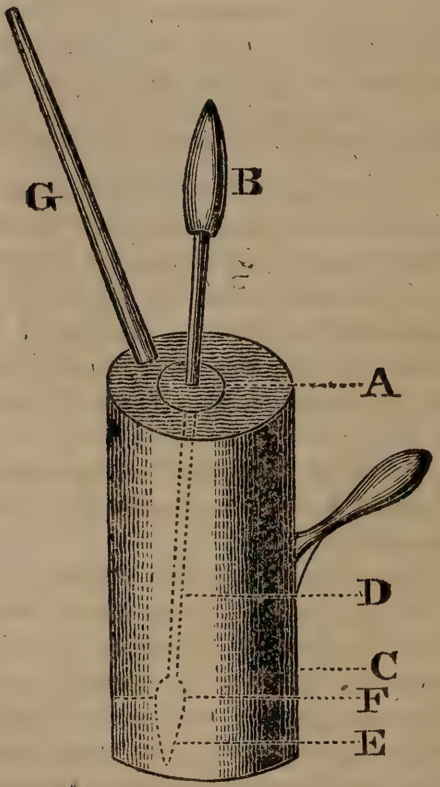
By the by, he has had but *one* dose since he left off his regular attendance.

Upon the whole, then, it may, I presume, be inferred, from the cases here adduced, that the efficacy of carburetted hydrogen, produced in the manner I have detailed, possesses decided advantages in chronic and in recent cases of pulmonic affections, before the accession of active inflammatory symptoms In the few cases that have come under my observation, wherein I have applied it, *immediate* relief and ultimate benefit have accrued to the patient. The only instance of failure I have experienced was in the second attack of my own child: there, I candidly confess, my former success rendered me blind to the existence of active symptoms, until I perceived them increased by the stimulating nature of the application. Yet, after the inflammatory action was removed, the effect of the vapour was certainly efficacious: so that, it appears in cases where the lungs are under the influence of an inflammatory diathesis, the exhibition of this remedy is improper; but in chronic pulmonary affections, and also subsequent to the existence of increased arterial action, I have no doubt of the superior efficacy of this gaseous compound. I will not presume to enter into any thing like a rationale of its qualities:—that I leave to abler pens than mine. I would only offer *facts*, with such comments merely as arise from a due consideration of the importance of the subject; feeling, as I do, that many children may be yet saved from premature death, by the adoption of this simple yet powerful remedy, even by the parents themselves. Should I be so fortunate as to stimulate, by my humble efforts, one individual to a successful application of the *vapour of Barbadoes tar*, my object will be obtained, and I shall rest satisfied with the result of this communication.

The mode of administering the vapour I adopted in the case of Master Wallis, and my own child, which I have since found exceedingly applicable to infants, is simply this. A vessel of tin, resembling a coffee-pot, contains the tar: the size is immaterial; twelve inches by four will suffice for the generality of cases: a conical tube issuing from the top; a corresponding opening on the opposite side, to allow a draft, that the vapour may ascend. The iron is what may be obtained at any ironmonger's: laundresses use it for what they term the *Italian iron*. This heater being attached to a firm iron rod, terminating in a wooden handle, is altogether eighteen inches in length. The cover or lid of the pot is made to slide on this rod; so that when the heater is made hot, upon being immersed into the tar, the cover fits on, and prevents any escape of vapour. The tube of the pot is then kept to the nostril, at the proper distance, that the vapour may be inspired.

Care must be taken that the heater be not red hot, in which case, ignition of the gases, attended by an explosion, will happen, and may be of serious consequence. This happened once with me: I therefore caution those who use the remedy, to observe the degree of heat ere the heater be immersed in the tar: neglect of this observance on my part occasioned ignition, and burnt the eye-lashes and eye-brow of my little patient Wallis.

The following is a delineation of the Instrument just referred to.



A, The cover, which fits into the top when the heater is put into the tar.

B, The wooden handle of the heater.

B, The situation of the opening, above the size of half a crown, an inch and a half.

D, The iron rod of the heater.

E, The heater.

F, The height of the tar, beyond which it ought not to rise.

G, The tube, which is eighteen inches long, for the convenience of guiding the apparatus in conveying the vapour.

The inclination of the tube from the plane of the cover may be at pleasure.

I would observe, that the exhibition of the vapour never produced vomiting, whenever I have applied it, unless the bronchiæ were loaded with mucus; and in either case, viz. whether there existed mucus or not, the remedy invariably operated as an anodyne, producing sleep.

(We are much obliged to Mr. Wansbrough for the above communication. It appears to us, although we have had no experience on the subject, that the tar vapour might be useful in the last stages of croup, when the trachea and bronchiæ are plugged up with secretion.)

On Hydrocyanic Acid. By Richard Maguire.

(From the London Medical Repository for April 1821.)

As hydrocyanic acid, so strongly recommended by authorities of high respectability at home and on the continent, is likely to come into very general use as a medicine, it is an object of great importance, that an agent of such powerful and dangerous activity should be prepared by some determinate standard process, which may ensure certain uniformity in the result, and, as far as may be, safety and facility in the execution.

These objects, I believe, cannot be altogether commanded by the processes of Scheele, Vauquelin, and that said to be adopted at Apothecaries' Hall.

Scheele's process is objectionable, from the unavoidable, indefinite loss of the acid, during its liberation from the cyanuret of mercury, subseqnent exposure, in *twice* pouring into the retort for *two* distillations, at two hundred and twelve temperature; the first impulses of which, causing this very volatile acid to rise rapidly in a gaseous state, *without* adequate provision for its absorption and condensation, a considerable part must either escape through the luting, as Scheele himself remarked, or risk the bursting of the vessels, to the no small hazard of the operator.

The same objections, the first excepted, equally attach to the process followed at the hall.

Vauquelin's process is objectionable, from the difficulty of ascertaining the complete decomposition of the cyanuret, without filtering and testing a part of the mixture, rendered thick and black by the detached sulphuret of mercury; and unavoidable loss of prussic acid during that decomposition, and the subsequent exposure by filtration, &c. however carefully managed.

Reflecting on the most likely means of obviating these objections, it occurred to me, that the desired object of transferring in *one* operation, the whole of the prussic acid contained in a given quantity of cyanuret of mercury, decomposed by muriatic acid, to a given quantity of distilled water, may be best accomplished by (a modification of Gay Lussac's process for obtaining the pure concentrated acid,) transmitting its vapour through a tube containing *only* pure carbonate of lime, thence directly into the water kept at nearly thirty-two degrees temperature.

On trial, I found my expectations fully answered in every respect.

To such as are perfectly conversant with chemical operations, the following description of the process and appropriate apparatus may appear unnecessary; but as it may assist in facilitating the due preparation of the medicine by several too remote from its present limited sources of supply, to procure it with sufficient promptness and convenience for the increasing general demand, it will not perhaps be considered altogether superfluous.

The annexed sketch is a representation of the apparatus.

If the horizontal tube to be nearly filled with very small pieces of white marble, be a little bent in the centre, the small quantity of fluid condensed in it will be prevented from approaching either extremity. A hollow bulb blown in the the small tube entering the receiving bottle, will prevent any of the liquor in that bottle from being forced into the horizontal tube by pressure from diminished temperature. The foot of this small tube should reach nearly to the bottom of the receiver, and pass rather tightly through a cork, perforated in the centre, and well fitted to its mouth. This contrivance will afford a discretionary power of adding to the pressure of the high column of water formed by the long narrow shape of the receiver, and also of obviating occasional expansion from unnecessary increase of temperature, which, at no period of the process, should exceed one hundred and twenty degrees. The tubulated matrass, (a form, I think, preferable to that of a retort, as its neck may be more easily bent and made cylindrical of the desired size,) and the right angled tube may be either ground into the ends of the horizontal tube, or steadily inserted by means of perforated corks, carefully luted, and further secured by strips of moistenced bladder firmly tied round.

Thus adjusted, I put six fluid ounces of distilled water into the receiver, surrounded with ice; one ounce and a half of pure crystallized cyanuret of mercury, powdered into the matrass; over it, one ounce and a half of pure colourless muriatic acid, .150 sp. gr., and closed the tubulure with its glass stopper. The prussic acid began immediately to be disengaged and rise in vapour. For a few seconds the displaced atmospheric air of the vessels (which should not be of larger capacity than necessary) was suffered to escape from the receiver. It was then closed by the moveable cork, and so left for the night. The acid was found in the morning still passing over, as indicated by bubbles slowly arising from the surface of a small remaining portion of undissolved cyanuret. By the gradual application of a very moderate heat from an Argand lamp, the bubbles rose more rapidly, and so continued until the complete solution of the cyanuret, when they ceased entirely. The temperature was then gradually raised to one hundred and twenty degrees, and so steadily continued until the liquor in the matrass, becoming cloudy, from precipitating bichloride of mercury, indicated the entire expulsion of the prussic acid, which proved to be the case, as on loosening the stopper the least smell of it could not be perceived. To expel it from the horizontal tube, it was gradually brought to one hundred and twenty temperature, by a heated iron, cautiously held underneath at due distancc, and slowly moved from the matrass end to the other; the lamp still remaining under the matrass. This accomplished, the receiver was removed, and immediately closed with its glass stopper.

During the whole process, which, from the time of placing the lamp under the matrass, did not occupy an hour and a half, no smell of prussic acid was perceptible at the junctures, at the mouth of the receiver, nor from the horizontal tube, separated immediately after from the matrass and small tube. The water had therefore absorbed and condensed all the acid contained in the cyanuret.

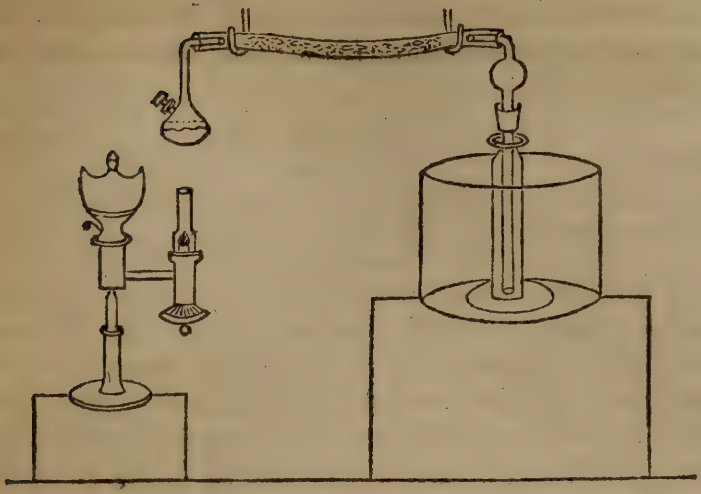
It is obvious, that in this way it may be made of any desired degree of concentration. But the necessity of appointing one invariable standard will be more evident, if the discrepance in proportionate quantity and uncertainty in strength, of the aqueous acid afforded by the three processes at present used be considered:—

		Aqueous Acid.		Cyanuret.
Scheele's	affords..about..	2	from.(about).	1
Vauquelin's		6½		1
Apothecaries' Hall		5⅓		1

Until a standard shall be appointed, I thought it best to use the medium proportions of four to one: so made, the acid, given in doses of three drops every third hour, produced all the sedative effects described by Dr. Granville, so decidedly, as to cause a temporary suspension of its use, in the only three adult cases which, as yet, have presented fit opportunities for its trial. It may, however, be advisable to determine on a lesser degree of concentration. The doses could be more accurately subdivided; it would be less dangerous, and less liable to loss of gaseous acid by exposure.

As the purity and strength of the product may essentially depend on the quality of the cyanuret, which is liable to be reduced to the state of a sub-cyanuret, by too high a degree of temperature incautiously or accidentally applied in the preparation, none should be used for this purpose that is not in white crystals, which will not be thus afforded in the first instance; and from this cause may possibly arise the yellow colour of the acid prepared at the Hall. Much of the trouble and loss of time attending the necessary purification of this salt, by repeated solution and crystallization, as directed in the Paris Codex Medicamentorius, may be saved, and pure crystals obtained, by proceeding in the following manner: evaporate the filtered liquors to a pellicle, by the heat of a vapour bath; after which continue the evaporation at a reduced temperature, with constant stirring, until a proportionably small quantity of deep yellow mother water remain, which is to be drained off. The purer salt requiring more than eight waters, at fifty-five degrees, for solution, is to be freed from the remaining more soluble colouring matter by washing with successive small portions of distilled cold water. One solution and careful crystallization will then afford it pure. The washings may be put by for a future preparation.

For a sketch of the apparatus see the following page.



On Colchicum Seeds. By John Edward Gray.

(From the London Medical Repository for April 1821.)

Dr. William Williams, of Ipswich, has introduced to our notice, with very great praise, the use of colchicum seeds in chronic rheumatism; and they indeed appear more certain in their effects, in the two cases that I have tried them, than the root. But as there has heen a greater call for them than the herb shops had expected, or than they could readily procure, several other seeds have been sold for them, and by that means a fair trial of them has not been given. Therefore I have sent a description of the seeds, as Dr. Williams has only figured the capsule, and that when it was not ripe.

Semina Colchici Autumnalis.

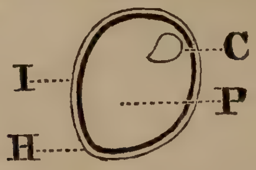
Seeds, ovate, globose, about one-eighth of an inch in diameter.

Integuments, simple, soft, spongy, membranaceous, thin, reddish brown, closely adherent to the perisperm.

Parisperm, or *Albumen*, hard, rather cartilaginous, pellucid, pale, not in the least divided, of the same shape as the seed.

Corculum, or *Embryo*, very small, ovate, globose, not in the least divided, whitish, placed nearly opposite to the *hylum*, or that part where the seed is affixed to the parent plant, but out of the axis of the seed. Base pointing to the hylum, slender. Apex very obtuse.

The following is a transverse section of the seed from the hylum to where the corculum grows out, much enlarged:—



I. the integuments. P. perisperm. H. hylum. C. corculum.

The capsules should be gathered just before they are ripe, and then dried in the shade; and it would be better to keep the seeds in the capsule till they are used, in the same manner as is usual with *cardamomi minores.*

I have seen a flat seed sold for them, which appears to belong to a plant of the family of *liliacea.* The seeds are very like several of the plants belonging to the family *asphodelæ*, as the *hyacinthus nutans*, the common hare bell, &c. but the integuments of all these are crustaceous, brittle, shining, black; and in the family *smilaceæ* it is thin, membranaceous, and they are enclosed in a berry.

An Analysis of the Root of the Rheum Palmatum, or Rhubarb.

By W. T. Brande, S. R. S., &c.

(From the London Medical Repository for February, 1821.)

1. There appears to have been no chemical investigation into the nature of rhubarb, if we except a few experiments upon it given in Neumann's Chemistry, where it is stated that a great portion of it is soluble in water, and that alcohol scarcely acts upon the residue. Neumann got from four hundred and eighty grains one hundred and eighty of alcoholic, and afterwards one hundred and seventy of watery extract; and inversely, three hundred and fifty watery, and only five of alcoholic extract.

2. In the following experiments the finest Russian rhubarb was used, free from decay, and distinctly streaked with white and red veins upon its cut surface: the former are chiefly gum, the latter contain the extractive and astringent principle, as may be shown by washing the surface with a dilute solution of iron, when the red streaks only are discoloured.

3. One hundred grains of rhubarb, digested in eight ounces of boiling water, till cold, gave a yellow-brown infusion, which was tested by the following re-agents, and gave the annexed results:—

Acetate of lead	a copious yellow precipitate.
Subacetate of lead	a red precipitate.
Proto-muriate of tin	a copious yellow precipitate.
Broto-sulphate of iron	an olive-green precipitate.
Nitric acid	a brown precipitate.
Oxalic acid	no effect.
Infusion of galls	no effect.
Solution of gelatine	a copious brown precipitate.

4. It may be remarked, in respect to the above precipitates, that nearly the whole of the colouring matter was carried down by the acetate of lead, so as to leave the supernatant liquor almost colourless. The precipitate by nitric acid was most copious when a few drops of acid were added to the concentrated infusion; it had the character of resinous matter, and was probably altered extractive. It was again dissolved by nitric acid added in excess. The precipitate by gelatine was most copious in the cold infusion; it scarcely formed in the hot infusion, and was re-dissolved by adding excess of the solution of isinglass.

5. One hundred grains of the bruised root were digested repeatedly in fresh portions of alcohol, (specific gravity 8.15,) till it exerted no further action, and came off perfectly colourless. The residue weighed, when dried at 212°, 55.8 grains; it was insipid, and when put into water it softened and gave by long digestion a viscid solution. When subsequently dried, it was found to have lost thirty-one grains, which, obtained by evaporation, had all the characters of gum; it was insoluble in alcohol, and did not affect solution of iodine.

6. The alcoholic solution was of a deep yellow colour, and had a peculiarly nauseous taste; it was concentrated by distillation, and carefully evaporated to dryness: it left a brown residue weighing thirty-six grains, which being triturated with cold distilled water, and poured upon a filter, and resolved into ten grains of insoluble resin and twenty-six grains of soluble matter.

7. The resin, amounting to ten grains, was of a brown colour, gave out an aromatic odour when burnt, and entirely dissolved in sulphuric ether.

8. The twenty-six grains of matter, soluble in water, were obtained by evaporation, and afforded, upon being re-dissolved, a clear brown aqueous solution, which rendered solution

of isinglass turbid, blackened solution of iron, and formed a copious precipitate with acetate of lead: this residue, therefore, was chiefly extract of tan.

9. From the above experiments it appears, that one hundred parts of rhubarb contain

Gum	31	55.8 grains (5)
Wood and insoluble residue	24.8	
Resin	10.	36. (6)
Extractive and tan	26.	
	91.8	
Loss	8.2	
	100.	

10. The loss in the above experiments may be ascribed to water; for upon drying rhubarb by long exposure to heat a little above 212°, the average loss of several samples was *ten per cent.*

11. One hundred grains of rhubarb were put into a small retort, and distilled by a heat gradually raised to redness. Water at first passed off, succeeded by a yellow vapour, which condensed in the neck of the retort into a thick oil, and an acid liquor passed into the receiver, which blackened permuriate of iron. Forty-one grains of charcoal remained in the retort, which were reduced to powder, digested in dilute muriatic acid, washed and dried at a red heat in a close vessel. They lost in this process 6.5 grains.

12. The muriatic solution, on being saturated with pure ammonia, let fall two grains of a substance having the characters of phosphate of lime. This was separated by filtration, and carbonate of ammonia added to the filtered liquor gave a further precipitate, which, collected and dried, was found to be 4.2 grains of carbonate of lime.

13. The results, then, of the destructive distillation of rhubarb may be stated as follows:—

Water	10
Empyteumatic oil, gallic acid and water formed	49.
Charcoal	34.5
Phosphate of lime	2.
Carbonate of lime	4.2
Loss	3
	100.0

14. To ascertain in what state the 4.2 grains of carbonate of lime had existed in the root, before its destruction by fire, one hundred grains of rhubarb were deprived of all soluble matter by the action of alcohol and water; these solutions were evaporated, and the residue submitted to a red heat in an open platinum crucible burnt away, leaving no appreciable portion of earthy alkaline or saline matter, a small trace of common salt and of lime excepted. The insoluble woody fibre was digested in muriatic acid, and the solution saturated by ammonia; it gave a precipitate weighing 8.5 grains, from which, by the action of sulphuric acid, a portion of malic acid was separated. If this precipitate, therefore, be regarded as composed of phosphate and malate of lime, it would consist of

	grains.	
Phosphate of lime	2.	(12)
Malate of lime	6.5	
	8.5	

15. The component parts of rhubarb, therefore, would appear, from the whole of the preceeding data, to be as follow:—

Water	8.2	(10)
Gum	31.0	(5)
Resin	10.0	(7)
Extract tan and gallic acid	26.0	(8)
Phosphate of lime . .	2.	(12)
Malate of lime	6.5	(14)
Woody fibre	16.3	(5)
	100.0	

16. The very copious precipitate obtained by adding solution of acetate of lead to infusion of rhubarb, induced me to hope that some peculiar principle might be found in it, combined with the metallic oxide; I therefore collected a quantity of the compound, diffused it in water, and passed sulphuretted hydrogen through the mixture, which was afterwards boiled, filtered, and evaporated to dryness: a brown viscid substance, of a peculiar smell, and somewhat acid flavour, remained, which I was at first inclined to regard as some distinct principle; but a few experiments soon taught me

that it was merely a mixture of extractive matter with a little sulphuric acid.

17. The activity of rhubarb, as a medicine, appears to reside entirely in those principles which are soluble in alcohol; the alcoholic extract was found in a drastic purge, and and the resin, in its pure form, also proved aperient; while the gum obtained from the residue, insoluble in alcohol (5), was perfectly inert, and did not possess any peculiar medicinal qualities.

SELECTED REVIEWS.

Principes généraux de Physiologie-Pathologique coordonnés d'après la Doctrine de Broussais. Par L. J. BEGIN, Chirurgeon Aide-Major a l'Hôpital Militaire d'Instruction de Metz. 8vo. pp. 390. Mequignon-Marvis, à Paris, 1821.

(From the London Medical and Physical Journal for March 1821.)

ABOUT a year since, we noticed a book professing to be the substance of the lectures of Dr. Broussais, and of which we promised to present a particular account to the readers of this Journal; but, on further consideration, we determined not to do the professor at the Val-de-Grace so much injustice as to promulgate such vague, imperfect, and desultory statements, under the title assumed for them. Dr. Broussais has himself published only a Treatise on Chronic Inflammation, a work entitled an "Examination of the Medical Doctrine generally adopted," and some Memoirs in the *Journal Universel des Sciences Médicales*, and other Journals; of the whole of which an abstract has been given in the exposition of his doctrine inserted in some late numbers of this Journal, and the Historical Sketches of the Progress of Medicine: so that, on perusing the work of Mr. Bégin, and finding him say, in the introduction, if there is any thing good in it, it must be attributed to Dr. Broussais, we are obliged to infer that the professor has developed many views in his lectures that are not to be found in his printed publications. Yet, even admitting this supposition, we cannot but admire the modesty of Mr. Begin, in claiming for himself so little merit as he has done on this occasion. The work is composed in so methodic and perspicuous a manner, and presents such a well-arranged exposition of the principles in physiology that are of most essential importance in regard to pathology, that, as a mere compilation, it might obtain no small degree of credit to a writer who had even acquired so much estimation as had already been attained by Mr. Bégin. This work is not, indeed, a mere exposition of the doctrines of Broussais; for the author has advanced objectionable criticism to his opinions, and has in some instances deviated from his principles in the theories he endeavours to establish; and he has himself shown, in a very favourable point of view, the benefits that will arise to pathology from the further applicatian of the knowledge of the human economy in the state of health than had hitherto been effected.

Amongst the reflections contained in the introduction, (which is full of judicious considerations,) the author adduces some good remarks on the utility, and indeed absolute necessity of theory, which he concludes with saying, that, "notwithstanding their continual declamations against theories; the empirics always suffer themselves to be guided by the ideas they form of the nature of the disease; and they constantly appropriate, in spite of themselves, their remedial measures to that supposed nature." An English author (whose writings we have often quoted of late, when some of the most interesting and difficult questions relating to medicine have come before us,) had previously remarked, in his "View of the Relations of the Nervous System," that general conclusions are made "by none more frequently than by those who profess to hold theory in contempt, but who, in fact, practise more upon theory than any others, and in general upon that of the very worst kind,—namely, that founded upon the loosest analogies; upon that made with no care, with no trouble; upon that which they would be offended to hear called theory: unaware of the process of their own minds, they fancy that inferences are visible things; they are perpetually meeting with solitary facts, and as often generalizing them, until they meet with opposite facts; and it is highly probable that they will generalize them too; or else they are at their *ne plus ultra*, and conclude it is all a dark business."

The first chapter in the work before us relates to "the Vital Properties." The author here exposes the error of conduct of those who have regarded the results of the properties of organization as elementary existences independent of such organization, and who have talked of changes of the vital properties as if it were possible that alteration could take place in them without any change of the structure on which their existence depends. But his own notions on this subject are not free from much obscurity, and even positive contradictions. He says, "*For the physiologist who embraces at one view the whole series of organized beings, there exists no other vital properties than those which are inherent with all bodies endowed with life, at all the epochs of their existence, and which are* *absolutely indispensable for their preservation. In proportion as the organization becomes complicated, its acts become more numerous; but it is not because those properties are multiplied, —it is because the organs are more varied and execute more difficult functions.*" If the vital properties are regarded as the causes of organization, there must be a diversity in them consonant with the diversities of the organization produced, or effects must take place without causes. If they are considered as the effects of organization, we only shift the difficulty, as will be presently shown. It might be supposed that Mr. Bégin may regard the vital properties as the properties of a principle that is attached to organized bodies, on which they act as with machines variously constructed; but that such are not his notions will appear by his definition of irritability. He says, "*Thus defined, the vital properties are reduced to one single power, or rather to one single fact, which I call* IRRITABILITY, *after Glisson and Gorter.*" (Here he converts his obscure inferences into a FACT.) Irritability he defines, "AN APTITUDE POSSESSED BY CERTAIN BODIES TO RECEIVE THE IMPRESSION OF OTHER BODIES WHICH ARE FOREIGN TO THEM, AND TO MOVE THEMSELVES IN CONSEQUENCE OF THIS IMPRESSION."—"*Irritability,*" he then immediately adds, *is a quality, a condition, an inherent property, of all matter endowed with life: it depends on the organization of that matter; it arises, is developed, and disappears, with the organic texture: but its nature is as inconceivable as gravity, extent, and all the other physical properties of bodies.*"

According to this reasoning, it appears, then, that all the vital properties are reduced to irritability; are but irritability; that irritability is dependent on organization, and that it is identical, though the organization is various, and executes various functions. The only means, then, of accounting for this diversity of functions are, either diversities of the *mechanism* of the part, (the validity of which proposition Mr. Bégin does not admit,) or the existence of *some other properties*. These other properties are considered by Mr. Bégin as the results of the laws of the *living chemistry (chimie vivante)* of Broussais: and thus he satisfies himself with mere *words*, instead of ideas or precise inferences. As—and the proposition is admitted—the laws of this *living chemistry* are different from those of the chemistry of inorganic bodies, that in which the difference consists, and which is peculiar to life, must be either a peculiar entity which is a cause of life, and, being a cause, must therefore enter into life as one of its constituents, and consequently must become a property of life;—or it must be the effect of life, and, being an *effect proper to life*, it must have its proper or peculiar causes; which peculiar causes (in spite of an abuse of terms) must be properties of life, or *vital properties*. Thus, by this mode of reasoning, a diversity of vital properties is demonstrated.

It is true that Mr. Bégin assumes a distinction between *functions* and the mere development of vitality; and he simplifies the idea of life so far as to make it consist in "an aptitude possessed by certain bodies to receive the impressions of other bodies which are foreign to them, and to move themselves in consequence of this impression." But he cannot, by this assumption, get out of the dilemma in which we have shown him to be placed. This simplification of life is an untenable assumption: it is a gross absurdity. How can an *aptitude to move on the receipt of certain impressious*, combined with any mechanism, account for any one *proper vital act?* Besides this, his distinction of *functions* and the *simple act of vitality*, supposes effects to exist of which there are not the causes. For, as the diversities of function are not explicable either by diversities of *mechanism*, or by diversities of *vital properties*, and (as it has been above shown) his *living chemistry* being referable to *vital properties*, there remains nothing that can be the causes of those diversities of functions: therefore, according to his own reasonings, *they must originate from nothing*.

That Mr. Bégin should have got into such a dilemma, by attempting to reduce the vital properties to *one single principle*, does not much surprise us. These, however, are but uninteresting topics to most readers; and we should not have dwelt so long upon this part of the work, had it not been the production of such a physiologist as one of the writers of the article "Irritabilité," in the *Dictionnaire des Sciences Médicales*.

The second chapter of the work before us is on "the Varieties of the Animal Organization;" a title somewhat too comprehensive, as the disquisition relates only to what have ordinarily been termed diversities of *temperament* and *idiosyncracies*. Mr. Bégin employs the latter term in a new sense, and he makes a distinction between temperaments and idiosyncracies, that he has, perhaps, derived from Bordeu. He proposes, besides making the temperaments of individuals,—which should be characterized by the relative prevalence of the *sanguineous*, *nervous*, or *lymphatic* systems throughout the body generally; that we should designate the organs or functions which predominate in the economy, and regard such a predominance as designative of the idiosyncracies. Thus, a person may be said to have a sanguineous temperament and pulmonary idiosyncracy; or a nervous temperament and an hepatic idiosyncracy; or a lymphatic temperament and a mucous (from a predominance of activity or irritability of the mucous membranes) idiosyncracy; or one of the above-mentioned temperaments with fibro-articular idiosycracy, (in which the ligaments of the joints are especially disposed to disease; and which idiosyncracy constitutes, according to Mr. Bégin, what has been called the *gouty diathesis:)* and so with the other combinations of the *three* (above-enumerated) general, and the more numerous particular, varieties of the organization in individuals. There seems to be nothing objectionable in this proposition, whilst it is qualified to favour conciseness in the narration of particular histories of disease.

The importance of the influence of peculiarities of temperament on particular cases of disease, has not, perhaps, been sufficiently considered of late, by the generality of English practitioners. Darwin probably carried this doctrine too far, as well as his sympathetic theory; and hence, very likely, the improper discredit into which they have both fallen: for the abuse of principles, however good, by excess in their application, very commonly leads to an unmerited degree of neglect of them. The fate of Darwin and his medical writings has, however, been somewhat extraordinary. He obtained an overwhelming reputation during his life,* and he is already almost forgotten; and his works have contributed much to the unjust odium of medical theory that is now prevalent, whilst they present many of the most admirable examples of its utility.

Mr. Bégin says, " the doctrine of the temperaments is one of the most important parts of medical theory. It is the foundation of the most valuable indications for medical practice. Men differ so much according to the diversities of their constitutions, that the otherwise best narrated histories of disease would be incomplete, and barren to our contemporaries and to posterity, if we neglected to designate the peculiar organization of the subjects of them, before we described the causes, the symptoms, and the termination, of the maladies to which they relate."

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* And this not merely with the public, but with the profession also; many proofs of which might be adduced. As one instance, we may mention that the physician who, next to Darwin, had obtained the greatest celebrity in the West of England, carried his daughter to Derby to place her under Darwin's care, with a confident expectation that he could cure her, though she was in the last stage of tubercular consumption.

Amongst the temperaments and idiosyncracies, some are born with us,—at least, the predispositions to them are transmitted by generation; others are produced either by the revolutions which ordinarily take place at different epochs of life, or result from certain modes of living, climate, &c. To overthrow an unfavourable temperament, and correct a vicious idiosyncrasy, and replace them by more advantageous conditions, are the objects of physical education and medical gymnastics, rather than of the ordinary practice of medicine: and are, therefore, not considered by Mr. Bégin in this work. He directs his attention to the exposition of the consequences of the particular conditions above alluded to, when they actually exist, and endeavours to draw some practical indications from his views. The sanguineous temperament, he says, always accompanies the muscular idiosyncrasy, and it is commonly accompanied with gastric and genital idiosyncracies. Inflammation, in the subjects of it, but rarely passes into the chronic state, or affects secondarily the *white vessels.** The heart is particularly liable to be affected by sympathy, and it is one of the conditions in which the most precise indications may be drawn from the state of the pulse; the most important of which are in review by Mr. Bégin. He dwells especially on the important fact, that a very high degree of excitement of the capillary vessels and pain, instead of increasing the action of the heart, "chain" the motion of that organ, which then becomes tumultuously agitated, and dilates with difficulty: in which state, blood-letting, abstinence from food, and cold drink, serve to develop its movements; a result which is frequently found to take place in a very sudden manner, after the reduction of a strangulated hernia. On discussing the question, "What is the cause of the fullness and largeness of the pulse observed in certain cases of irritation; whilst others render it small, hard, contracted, and almost convulsive?" he says, "when the inflamed parts are soft, spongy, easily dilatable and not abundantly supplied with nerves, the pulse is full, developed, the artery pulsates forcibly, and raises the finger applied to it: such are the pulsations which characterize inflammation of the laminous tissue of the lungs, the liver, the spleen, and all the the parenchymatous organs." The occasional deviations from this condition have not escaped his attention, and are afterwards considered. Broussais supposes that the larger congeries of capillary vessels, when irritated, establish an obstacle to the circulation which renders the pulse full and hard. This explanation is opposed by Mr. Bégin: because we find such a pulse when no particular obstacle to the circulation can be supposed to exist, as after vigorous exercise, and in one arm alone when this member is exclusively exerted; and because such a pulse is present with slight degree of inflammation of the mucous membrane of the stomach and small intestines, when no considerable obstacle can be supposed to exist; whilst the pulse becomes small, hard, and contracted, when the inflammation has acquired a greater degree of extent and violence. Mr. Bégin thinks that the diversities of the character of the pulse should be attributed to relative diversities of sympathy with the organs affected, from which they arise; and this explanation is not at all inconsistent with the facts that a full soft pulse ordinarily accompanies inflammation of loose parenchymatous structures, and a small hard pulse that of firm extended membranes. In the former case, there is but little pain, and the capillary vessels are freely dilated; circumstances which sympathetically affect the heart, so as to excite and develop its movements. In the latter, there is severe and often intense pain; the free dilatation of the capillaries is prevented, and the heart and arteries are affected so that the dilatation and contraction of the former are impeded by the intensity of the suffering: and the latter are contracted, by a sort of erethism, on the column of blood which traverses them. Every part, Mr. Bégin further argues, has its peculiar sympathetic relations with the heart; and hence the connection of particular states of the pulse with diseases of particular organs, and even particular forms of structure. Hence, different kinds of pulse accompany inflammation of the mucous, muscular, and serous, tunics of the intestines.

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* See the exposition of the Doctrine of Broussais in this Journal for January last, for an explanation of this expression.

On treating of the nervous temperament, the author digresses somewhat from his proper course, and advances some suppositions respecting the cause of the first inspiration of the infant, and the feelings which lead him to take food. He attributes the former to the uneasy sensation excited in the lungs by the presence of blood in them that has not undergone the modification it had received in the placenta; and he thinks that spirituous frictions on the skin only tend to establish the act by rousing the brain, and rendering it sensible to the call made on it by the lungs. He exercises his imagination in a similar manner, to account for the instincts and passions of animals. We are all acquainted with Darwin's attempts in this way, especially with his reasonings on the pleasure with which men regard the breast of a pretty young woman; to which, however, there happens to be this objection, that a man who has been *brought up by hand* has no such sensations on looking at a *spoon.*

Mr. Bégin discusses, also, in this section, the nature of consciousness and of delirium: and then treats of the influence of the nervous system on the rest of the body in the ordinary actions of life. In this part of the work there are several erroneous indications, or, at least, several assumptions which are not at all well established. He says, the tendons, ligaments, cartilages, and bones, are not penetrated by nerves;* and he adds, that "the free communication of the nervous extremities with the cerebral centre, is not indispensible to the nutrition of the organs in which these extremities are expanded. The *analogical proof* (this is Mr. Bégin's expression) of this fact, is furnished by animals entirely devoid of nerves, and by the tissues which in others want them, the nutrition of which is complete and very active. The direct demonstration of it, consists in the continuance of the phenomena of nutrition after all the nerves of a part have been destroyed, or after they have ceased to perform their functions, as is seen in some cases of paralysis of the limbs with total loss of sensation." Whether nervous influence is necessary for nutrition in animals supplied with nerves, is a matter of doubt; but we are surprised to find Mr. Bégin neglect some of the plainest points of anatomical demonstration, and talk of the continuance of nutrition in a part after the total destruction of its nerves. It is not possible wholly to destroy the nerves of a part, or even to interrupt their communication with their respective centres, without making a similar destruction of the arteries; for the ganglionic nerves are so intimately blended with the coats of the arteries, that it is impossible to divide them and leave the vessels continuous. The fact, too, from which Mr. Bégin infers a proof of nutrition without nervous influence, only warrants

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* This statement is so much in opposition to the most probable inferences from known facts,—as the occurrence of pain in ligaments, &c.—that we think it prudent to adduce Mr. Bégin's own words on this occasion: he says, " Les parties qui sont passives dans l'économie, et qui ne sont utile qu à raison de la résistance de leur textures, ne sont pas pénétrées par les nerves: tels sont les tendons, les ligaments, les cartilages, les os."

lymphatic system is in a state of relative debility in individuals of this temperament. Mr. Bégin infers, from its being especially developed, that its vitality is particularly developed; and hence, in conformity with a generally received axiom in physiology, that it is particularly liable to disease. Mr. Bégin remarks, that in subjects of this kind, not only is the lymphatic system particularly developed, but that this is the case also with all the tissues supplied only with colourless fluids, as the cellular tissue, &c.; a thing which must readily be preconceived, if what is very probable be admitted, that the whole of the soft structures of the body are constituted merely of congeries of vessels containing either red or white fluids.

One of the most common and most remarkable of the coincidences, of a morbid kind, with the lymphatic temperament, is a want of due solidity, and even, in some instances, a softening of the bones. Mr. Bégin only ventures to give some hints respecting the etiology of this affection, by remarking the well-known fact, that, whenever a spot of ossification appears, there are vessels containing red blood running to that point; and he infers that red blood is necessary for the constitution of bone. But, as animals which are devoid of red blood have bones as firm as those which have such a fluid, (a fact which Mr. Bégin denies,) this inference is not very probable, though it does not want the support of several facts which seem to indicate, in a slight degree, such a notion: thus, ligaments and periosteum ossify on being kept in a state of inflammation for a certain length of time.

The same causes, the author observes, that excite intense inflammation in sanguineous subjects, and in those of the nervous temperament what are called nervous diseases, give rise to hardly sensible inflammation in persons of the lymphatic temperament, and the sympathetic phenomena of such inflammations are but feebly developed. Hence, in the first, the same external causes will produce a degree of inflammation of the mucous membrane of the small intestines that will give rise to fever; and in the last only a mucous diarrhœa, without fever. In these individuals, the lymphatic vessels have the greatest tendency to become the especial seat of irritation; and hence arise the lesions of structure described on a former occasion* in this Journal.

The next chapter is on the *idiosyncracies;* but nothing is adduced here but such obvious inferences from what has already been stated in this article, as render any detailed extracts unnecessary. There are, however, some further remarks respecting the temperaments, that indicate a multitude of truths that may not be so readily discernible by every reader. Mr. Bégin says, "the temperaments above enumerated are remarkable in this, that any one portion of either of the three several systems, to the development of which they relate, cannot be irritated without all the parts of the same system being, for that reason, more disposed to contract that same irritation. An intimate sympathy unites with each other each of the vascular and nervous extremities of the body; and they cannot be much affected in one organ without being similarly affected in every other organ. Thus, when a sanguineous subject has inflammation in any part, the whole circulatory system is deranged, and the disposition to take on inflammation is increased in every organ. If several tumefactions take place in the lymphatic system in a person in whom this system is particularly developed, the lymphatic glands throughout the body will thence be particularly disposed to irritation; and what are called nervous diseases in any organ, in nervous subjects, increase the general susceptibility of the nerves, and they become affected with diseases similar to the one primarily established more readily than ordinarily. It may, then, be inferred, as a general law, that the appearance and renewal of inflammations, of *neuroses*, and of lymphatic tumors, communicate a new activity to the system especially affected in those diseases respectively, and augment the predominance of the sanguine, nervous, and lymphatic, temperaments. The history of morbid diatheses constantly furnishes proofs of the truth of this assertion; and it is in conformity with this law of the economy, that lesions which are primitively local become *repeated* in diverse parts of the body."

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* See *Eclectic Repertory for* January last.

The third chapter treats on the *mucous membranes.* These structures constitute a very important series of organs in the pathology of Broussais; and, as it is through them and the skin that all extraneons matters must obtain admissiom into the system, there can be no hesitation in allowing them to perform a very essential part in the production of the greater proportion of diseases. They are, however, regarded in too exclusive a manner in the work before us; for, after noticing their offices, and giving some examples of their sympathetic relations, Mr. Bégin enters on the consideration of diseases in general, without treating of the laws which regulate the functions of the other structures of the body besides the sanguineous, nervous, and lymphatic systems, any further than in a very partial way, as the phenomena which they develop are brought forward in connection with those dependant on the properties of the mucous membranes. This, however, is a necessary consequence of the manner in which Mr. Bégin regards the structure under consideration. It is, he says, " the fundamental part of the living economy; all the others are in a manner modelled on it; their functions, and consequently their organic forms, vary according to the wants of which it is the source, and the more or less complete manner in which it prepares the nutritive substance." It is true that all the soft parts of the body are probably constituted of nothing more than developments of nerves, vessels, and the most simple animal fibre, which, perhaps, enters as a constituent into the whole: but, whether or not this be the case, it seems certain that each of what Bichat chose to regard as the elementary tissues of the body, as the cellular, serous, and fibrous, besides those already enumerated, has peculiar relations with other parts of the system in states of disease as well as in that of health; and the exposition of their laws should, consequently, form part of a General Treatise on Physiological Pathology. The sympathies, too, are not treated on in so complete a manner as we might have expected: some of those of the mucous membranes are stated in this chapter, and others are noticed, in a casual way, in subsequent parts of the work. It would, we think, have been better to have adduced what is known respecting their laws in one distinct section; and thus the particular illustrations of them brought forward in the consideration of particular dieases, would have been more perspicuous. **Barthez** the late Professor of Medicine at Montpellier, took a very lucid view of this subject; and the inferences he drew from it present many very important indications for the treatment of disease. We shall deviate a little more than usual from our analytical course, in order to give an exposition of the view of Barthez, which, we suspect, will be new, as well as interesting, to a considerable portion of our readers.

As all the parts of the animal economy have a more or less intimate degree of vital relation with each other, it is necessary to mention in the first instance, the sense in which the term sympathy is here employed; it is considered, then, that *a sympathy takes place between two organs when any affection of one sensibly and frequently occasions a correspondent affection of the other, without this succession being with probability, imputable to chance, to the mechanism of the organs, or to their concurrence of action in a generic mode of function or affection of the living bo-*

dy. This definition excludes from the class of sympathetic actions several which Whytt, and subsequent writers, have generally confounded with them, and which are termed, by Barthez, *synergies*. Thus, action of the abdominal muscles accompanies the contraction of the bladder in the expulsion of the urine; and this connection has usually been called sympathetic, but it is *synergetic*. There is a concurrence of action in the abdominal muscles and the bladder, having a common and especial object, which is a natural function of the body,—the expulsion of the urine. A similar connection of active power exists between the abdominal muscles and the large intestines; between the same muscles and the glottis, exerted in coughing, certain efforts, &c. A similar synergy *(co-operation)*, for the fulfilment of an especial function, sometimes exists in disease; and hence some morbid actions may be classed amongst the synergies. This distinction of synergies and sympathies, is not a mere scholastic prolusion; it is qualified to establish some important practical indications: for, as the secondary affections of the former class have a specific tendency to the fulfilment of some object, it is obvious that no attempts should be made to remove them when the accomplishment of such an object is desirable: whilst those of the latter class, being merely an extension of disease, and having no such specific tendency, may commonly be removed with advantage; though they sometimes are connected—and probably as *causes*—with a disappearance of the primary affection; and when this happens, and the secondary affection occurs in a part the health of which is of less importance to the welfare of the patient than that of the primary, it may not be advisable to attempt their removal, at least not without some precautionary measures; as the primary affection sometimes recurs on the disappearance of the secondary, and apparently, as a related consequence of its disappearance:

The sympathies are arranged by Barthez in the following orders: 1°, *those of organs having no particular sensible or material connection;* 2°, *those of organs which resemble each other in their structure and functions;* 3°, *those of organs having particular connexions*,—that is to say, connections formed between two or more organs by an intermediate texture, as vessels and nerves common to them; or of a membranous or muscular structure which unites and renders continuous several adjacent organs; and those of organs assembled together in one system, which differs in its structure or functions from the other parts of the body.

The most remarkable of the sympathies of the first order, is that of the organs of voice, the neck, and the thyroid gland, with the genitals. The change which takes place in the *timbre* of the voice at the epoch of puberty, and which does not happen in eunuchs, is generally well known. The diapason of it commonly falls an octave at this period; and hence many who, when boys, were qualified to sing the *contr' alto* in concert, are calculated only for the *bass* after they have arrived at puberty. The neck of women, and especially the thyroid gland, enlarges much and rapidly at the same epoch, particularly after the indulgence of venereal passion; and hence the observation in the verses of Catullus:

> Non illam nutrix orienti luce revisens,
> Hesterno collum poterit circumdare filo:

and the experiments commonly resorted to by the people in Italy, to ascertain whether or not, as they say, a girl is a virgin.

A similar sympathy is observed in some diseases, as the *mumps*, and perhaps in some ulcerative affections of the genitals.

Other sympathies of this order are often manifested in disease of the liver consequent on some injury of the head: pain concentrated in a spot in the head in some affections of the uterus; but the most frequent of this kind are those of the stomach with several remote parts, which were treated on and illustrated by Dr. RICHARD HARRISON, in one of his Gulstonian Lectures, inserted in a late Number of this Journal: next to these are those of the intestines; instances of which are so common and well known, that the production of examples is unnecessary.

The sympathies of the second order are, also, very frequently witnessed; as in the general occurence of inflammation in one eye when it has been established in the other: and RICHTER mentions having seen amaurosis of an eye, previously perfectly healthy, succeed to the same affection in the other, when it happened in this as a consequence of external injury. The sympathetic contraction and dilatation of the pupils in the healthy state, is generally known. MORGAGNI relates the case of a child, twelve years of age, who had suffered convulsions in several parts of the body, which, at length, became confined to one of the hands, the fingers of which were contracted. When an attempt was made to extend these fingers, the otherwise healthy hand was instantly affected with convulsions, and became violently contracted. If only a single finger of the diseased hand was extended, the corresponding finger of the other hand was affected with convulsions, which continued as long as the attempt at extension was continued. Theden (in his *Neue Bemerkungen und Erfahrungen*, u. w. s.) relates the following, somewhat analogous, story. A vesicatory was applied to the right arm of a woman that was paralytic. The plaster produced no apparent effect in the part to which it was applied, but it excited redness and severe pain in the corresponding part of the other arm, during the whole time it remained on the paralytic one. The paralysis, however, now disappeared from the right arm, and affected the left. A vesicatory was then applied to this extremity, the action of which was manifested on the right, causing redness and pain, as on the former occasion. On the paralysis being cured, vesicatories were not found to be attended with any such particular effects. The character and talents of Theden are such as to claim credit for this story.

Frank (a son of the Professor at Vienna) mentions having seen the case of a woman who had paralysis of one of the arms, and who determined to use efforts to move this arm at the same time that she moved the healthy one: she soon, apparently by this means, recovered the power of motion in it. Frank says that he has tried the same practice with other patients, and that it has sometimes been attended with success.

It is remarkable, that when one of the symmetrical members has attained, by habit, increased facility in the execution of certain movements, the corresponding member has acquired a similar facility in the execution of movements in the contrary direction, and not in the same direction. No plausible explanation has hitherto been given of this curious fact.

Other sympathies of this order are frequently manifested between parts which, withont being symmetrically placed in the two lateral divisions of the body, have a similarity of structure and function. These are commonly witnessed in the skin, and in the fibrous and mucous membranes. Fanton mentions the case of a man having acute fever, in whom the portions of the skin on which there had recently been blisters, but which were quite healed, became again inflamed, and suppurated, when other and distant parts had blisters produced on them. The occurrence of inflammation of fibrous membranes in different parts of the body when it has been produced in one part, even by causes acting merely locally, as mechanical violence, is a very frequent phenomenon. Willis mentions having seen enlargement of the lymphatic glands in the neck occur, in consequence, he thought, of very great compression of the inguinal glands by a truss. Cases similar to this are related by BARTHOLIN and LE DRAN. The disordered state of the mucous membrane of the tongue which attends disease of that of the stomach, is another instance of sympathy of this kind.

When several successive alternations of affections have been established between two organs, naturally not particularly sympathizing, by any accidental causes, those organs contract a habit of correspondence of such affections.

The sympathies of the third order are very numerous: we shall merely give an example of each species of them, by way of illustration. The most remarkable instances of those dependent on particular nervous and vascular connexion, occur in the abdominal and thoracic viscera, as between the liver and the stomach and small intestines; the stomach and the heart, &c.; which seem to be explicable by the common origin and close alliance of the nerves of those organs. Those from the continuity of membranes, in vomiting produced by irritation of the fauces; in the pain at the extremity of the urethra from stone in the bladder; itching of the nose from worms in the intestines; various affections of the skin from disorder of the mucous membranes. The progressive extension of diseases of the skin, as well as of mucous and serous membranes, seems often to be dependant on the same laws. There seems, however to be a sympathetic connexion between the skin and some internal parts, that is not, apparently accountable for on this basis: thus, titillation about the ribs causes violent action of the diaphragm, which is not produced by titillation in other parts; and Barthez says, that an ointment in use in France, called *unguent d'arthanata* (composed of violent purgatives) produces vomiting when it is applied to the skin about the region of the stomach; purges when applied about the navel; and causes a great flow of urine when rubbed on the loins.

The sympathies of the whole of the digestive organs, and of the system of urinary organs, are examples of the species last enumerated. It did not, however, constitute any part of our intentions to enter into many details on this subject. We have adduced examples sufficient to show how the whole of the phenomena of this kind may be arranged in conformity with the views of Barthez, and we shall have occasion hereafter to notice many others of the most interesting kind to the medical practitioner, as we proceed in our analysis of the work of Mr. Bégin, who notices several which will, probably, be novel to many English readers, although this subject has been treated on by Wyatt, Darwin, and Dr. Andrew Wilson, in an extensive manner.

We should remark here, that the foregoing view of Barthez is not adduced as one that is free from obscurities. Some of the phenomena regarded as sympathetic, may be really synergetic, according to the definition of those terms given above: the alterations that take place in the neck and voice at the epoch of puberty, may tend, with the development of the organs of generation, to the fulfilment of some common object; though we cannot discern what that object is, nor discover the train of relations to it. A person, by exercising his imagination, might conceive that the change to the grave and sonorous voice in man, is only in conformity with other of his distinctive characteristics from woman: but why there should be so much greater a development of the cellular texture about the neck than in other parts of the body in woman, is not so obvious. It is not enough to say that it contributes to what is called beauty, because what is morally beautiful is generally found to tend also to some relatively physical good; and it is probable because certain objects tend to such good, that they are regarded as beautiful.

We return from this long digression to the work of Mr. Bégin, and resume our analysis of it where he treats of the sympathetic relations of the mucous membranes. Mr. Bégin makes no distinction of sympathies and synergies, and therefore comprises under the former appellation many phenomena which relate to the latter. We shall, if we produce in our course any observations of this kind, be content to use the terms employed by the author, and leave those readers to make the distinction above mentioned that think it of sufficient importance to engage their attention.

Mr. Bégin first notices the sympathetic relations of several parts of the mucous membranes and the brain, by which painful impressions originating from the mucous membrane of the fauces when there is want of drink, from that of the stomach when there is want of food, and from that of the lungs when there is want of air, are perceived by the sensorium, and by this medium determine the actions proper for their removal. What has been called spasmodic asthma, he says, arises from irritation of the mucous membrane of the lungs, which produces a spasmodic contraction of the glottis, and, by this means, the great difficulty of inspiration which attends that disease. The organic lesions of the lungs, heart, and pulmonary arteries, connected with it, and found after death, are, Mr. Bégin adds, consequences, not causes, of the asthma. This etiology, though it is but hypothetical, has much appearance of probability.

One of the most remarkable of the sympathetic effects of irritation of the mucous membranes of the stomach, œsophagus, and pharynx, is the production of the act of vomiting. Mr. Bégin argues that the membrane of the pharynx aud œsophagus has the sympathetic relation with the abdominal muscles necessary for the production of the act of vomiting independent of the stomach, because the proper actions of those muscles are excited by irritating those portions of membrane in an animal whose stomach has been removed, and when the eighth pair of nerves has been divided on each side; which division, he remarks, is followed by paralysis of the stomach. Mr. Bégin thinks that the only sensible action the stomach is capable of is a peristaltic motion similar to that of the intestines; and that the course of this action is reversed in vomiting, as well as in what may be termed *regurgitation:* (to distinguish it from vomiting properly, which is attended with action of the abdominal muscles, which does not accompany regurgitation, as we may readily observe in children, in whom this act is very common.) What has been termed *elective vomiting* (in which substances not fit for digestion are thrown from the stomach, whilst such as are adapted for that process are retained) seems to be only a sort of regurgitation; the stomach being excited to anti-peristaltic action only just in those parts where some improper and irritating substances are present.

The sympathy of the mucous membrane of the stomach and intestines with the skin, is next noticed by Mr. Bégin. "At the instant," he says, "when irritation is developed, and when congestion is established, in the mucous membrane of the parts above mentioned, the cutaneous surface becomes cold, a general shivering affects the patient, the vital actions seem hardly to extend to the external parts of the body: such is the onset of the greater part of idiopathic fevers, which are only *phlogoses* of those membranes. But this state of debility and torpor is soon dissipated: the irritated organ re-acts on the external parts; the vital actions are then roused in them, and are soon raised above their habitual standard; the skin becomes burning; it is dried by an arid heat or covered with an abundant sweat, according as the organs of digestion or of respiration are especially affected."—"The sympathies of the mucous membranes," he adds, "are more pronounced with the portion of the skin which corresponds with them, than with the other parts of the surface of the body. We observe that the heat is greater in the throat, the neck, the thorax, the epigastrium, the umbilical organ, the hypogastrium, according as the membranes which line the pharynx, the larynx, the trachea, the bronchiæ, the stomach, the intestines, the bladder, and the uterus, are the exclusive seat of irritation." These extracts develop the principal points of some views that were more fully exposed in the Exposition of the doctrine of Broussais, inserted in some late numbers of this Journal, and in the first of the Gulstonian Lectures of Dr. Harrison. The rest of this section is occupied with some considerations on the sympathies of the mucous membranes with the nervous system; but nothing is adduced that had not been noticed under the heads "Physiology" in the Historical Sketches of the Progress of Medicine, lately inserted in this Journal.

The fourth chapter treats on *diseases in general;* but we have arrived so near the limits of the present number, that we must defer an abstract of it till the next, when we shall complete the analysis of this work.

Anatomie und Bildungsgeschichte des Gehirns des Fœtus im Menschen, nebst einer Vergleichenden Darstellung des Hirnbaues in den Thieren. Von Frederic Tiedemann, &c. (*The Anatomy and History of the Formation of the Brain in the Human Fœtus; with a Comparative Exposition of the Structure of this Organ in Animals.* By Frederic Tiedemann, Professor of Anatomy and Zoology in the University of Landshut, &c.

(From the London Medical Repository for April, 1821.)

No organ of the animal economy has been studied with greater attention and perseverance than the brain. By many celebrated men, who, since the decline of the dark ages, have successively risen to illustrate and adorn our science, nothing which the spirit of human research could accomplish has been neglected, to discover its intimate structure, and develope the mystery of its functions. In later times especially, Malacarne, Sœmmering, Gall, Spurzheim, and the Wenzels, treading in the steps of Willis, and Vieussens, and Vicq d'Azyr, have distinguished themselves upon this arduous and entangled path of investigation. Yet, notwithstanding the labour and talent so long employed upon this subject, the organization of the brain remains a problem; and the uses of the numerous parts of which it is composed are still utterly unknown; although their invariable constancy, and the uniformity of their figure, bespeak that they exist for particular ends. And, while numberless hypotheses have been started upon the origin, formation, and composition of the encephalon, Anatomists are yet scarcely agreed among themselves respecting those parts to which the designation of brain is properly applicable.

In the practice of exclusively directing our inquiries to the adult brain, when the organ has necessarily become exceedingly complicatedin its structure, may be found the principal source of this ignorance and uncertainty; and the only efficient mean whereby this obscurity can be dissipated, is the light which may be acquired from the study of the organization of the brain in the inferior animals, and a close examination of its anatomy in the fœtus.

Comparative anatomy, although long neglected and decried, begins at last to fix the attention, and acquire the consideration, in the eye of the physiologist, to which it is so justly entitled. He is, after all, constrained to acknowledge, that by this light alone can he be safely directed in exploring the mutual relations of the various organs; and that the arbitrary impulse, communicated to his ideas by the immethodical observations of his predecessors, can by this mean only be effectually regulated. But it has happened in this, as in all the other branches of physiological research, that few writers have acted upon principles, the correctness of which has been universally allowed; and that most of them, unversed in the knowledge of natural history, which should constitute an essential part of medical education, reject with disdain the inductions furnished by comparative physiology. Dr. Gall, for instance, insists strongly on the absolute necessity of examining the structure of the brain in the whole series of animals provided with it. Yet, failing to confirm the precept by example, he has described and delineated the nerves and cerebral organ of but three or four animals; nor even are the observations which he has made upon them perfectly correct. Thus, notwithstanding the labours of Blasius, d Arsaky, and other celebrated writers, we really possess, upon the comparative anatomy of the nervous system, simple fragments only, from which nothing conclusive can be drawn, without a danger of farther embroiling the question, and substituting new errors for old ones: for all general rules respecting any point in anatomy and physiology are necessarily defective, when not deduced from the whole of the facts and observations which may relate to it.

The origin and formation of the brain in the embryo constitute another essential object, which has been equally neglected. From the days of Harvey, it has been well known that the fœtus does not originally possess the form which it is afterwards to exhibit; that in fact, its various parts exist not perfectly in miniature, but that its organization, at first very simple, becomes gradually more complicated; and that its development, instead of taking place by the simple evolution of parts already in existence, is really effected by a successive formation of new ones. Yet the application of this general truth to the physiological history of the encephalon has never hitherto been thought of; although in the work of the Wenzels, and in those of other continental writers, we find some valuable documents on the embryo brain.

It is precisely this application which Professor Tiedemann proposes, in the work now before us, to make. His object has been to prove that the brain of the embryo is not, at every period of pregnancy, an organ so complicated as we see it in the adult; but that it at first appears under a very simple form, which becomes gradually developed, as well by the addition of new parts as by the successive increase of those originally existing. At the same time, an attempt is made to show that the laws which regulate the formation of the brain of the human embryo, and of the inferior animals, are identically the same. With this view, luminous comparisons are instituted between the state of the fœtal encephalon in its different periods and degrees of development, and that of the same organ in the four classes of vertebral animals. From this parallel it results, that the stages through which the human brain successively passes in arriving at perfect development, are all exhibited in some of the individuals composing the series of animals; and that the most simple of them, such, for instance, as are remarked in the first moments of existence, are precisely those which animals, occupying the lowest degree of the scale, exhibit. In order to render more readily appreciable the progress of the formation of the organ, Dr. Tiedemann has first generally described the peculiarities which are presented during each month of gestation, and afterwards proceeds to particular considerations upon all these parts, both as they exist in man and in the inferior animals. The work, therefore, is naturally divided into two distinct sections. The first of these it would be impracticable to analyze; for as it is purely descriptive, all the details are so closely connected with each other, that the suppression of any one passage would render the whole obscure, and scarcely intelligible. In our attempt to display a general outline of the production, we shall consequently restrict ourselves to the indication of those leading propositions which will admit of being detached from the others, without compromising the clearness and perspicuity of our analysis.

The interesting observations of Dr. Tiedemann relative to the canal of the spinal marrow first demand our attention. It has long since attracted the notice of Anatomists; some of whom have regarded it as a constant appearance; but by far the greater number of writers this assertion has been contradicted; so that to the present day it has been a matter of doubt, whether the canal in question belong essentially to the structure of the organ, or be simply a consequence of malformation. From the researches of Dr. Tiedemann, it appears that the spinal marrow represents a canal, continuous, by means of the calamus scriptorius, with the fourth ventricle, which is, properly speaking, only a dilitation of it. The borders of this canal, at first loose and floating, adhere, towards the third month; and the tube which results from this cohesion afterwards diminishes progressively in diameter, in proportion as the pia mater, which lines it, secretes new cerebral matter. In the adult, a few traces of it only remain in the superior part of the medulla. From this it is evident that the continuance of the canal after birth, of which many examples are recorded in the writings of Portal, depends simply on defective nutrition, and in nowise bespeaks the influence of any morbific cause.

The canal of the spinal marrow, as Dr. Tiedemann observes, must not be confounded with other canals, which Gall asserts that he has discovered in the medullary chord of new-born children, and even of those at a more advanced age. These canals he describes as having no communication with the fourth ventricle, but as extending along the crura cerebri, beneath the tuber annulare and the tubercula quadrigemina, to the optic thalami, and forming, in the interior of these last, an excavation of the size of an almond. The existence of such canals Dr. Tiedemann formally denies, and asserts that they are produced by forcible inflation. He has never seen them in the human fœtus or adult, nor in the inferior animals; while the canal of the spinal marrow is invariably observed; and this, although obliterated in the human subject at an adult age, remains open for life in birds, reptiles, and fishes.

It has been asserted by Dr. Gall, that the spinal marrow is composed of ganglia, or swellings of the cortical substance, the number of which is equal to that of the spinal nerves. The German professor, reasoning upon the facts which he has drawn from observation, endeavours to prove the inaccuracy of the assertion. He remarks, that if the ganglia were the first formed parts of the spinal marrow, and the latter resulted from their cohesion, we ought to see them particularly distinct in the embryo, the nervous system of which is very simple, and scarcely half developed; but in fact, we discover nothing in the spinal marrow which can be compared to ganglia. Such arguments are irresistible: and again, the opinion of Dr. Gall respecting the ganglionic structure of the spinal marrow, implies a contradiction with a passage in which this writer says that each half of the spinal marrow should be considered as a membrane reflected on itself. If this last proposition be correct, as is incontestibly proved by observation, how are we to reconcile it with the preceding opinion?

Dr. Tiedemann at the same time attempts to prove that the grey or cortical substance is not the matrix of the nerves, as his celebrated countryman has asserted; and that it is not destined for their production. He, in fact, declares that it is formed subsequently to the white or medullary substance; and that the origins of all the nerves, as well spinal as cerebral, are apparent, ere yet there exists the slightest trace of it. Yet he agrees with Dr. Gall, that the cortical substance exists in greatest abundance in all those points of the adult, spinal marrow from whence the largest nerves proceed. It is very early seen, he observes, that the spinal marrow of the fœtus presents a greater diameter, and that its canal is largest about the origin of the nerves destined to supply the thoracic and pelvic extremities. Towards the close of pregnancy, when the parietes of the chord have acquired an increase of substance from the formation of new medullary fibres, and the capacity of the canal has been diminished by the successive depositions of cortical matter—such deposition is found to be most abundant at the points above mentioned. To give additional weight to his proposition, Dr. Tiedemann traces a rapid sketch of the researches which he has made at Venice, on the spinal marrow of the torpedo, the different species of silurus, and other fishes of the Mediterranean. From these curious observations, which precisely correspond with those of d'Arsaky; it appears that the origins of the nerves invariably present particular swellings, or ganglia of the cortical substance, when the nerves, or the organs which they supply, are strongly developed, or when peculiar organs exist, of which other fishes are destitute.

Reasoning from the highly vascular structure of the cortical substance, and from the general principle, that the energy of organs is always in direct proportion to the quantity of blood which they receive, Dr. Tiedemann concludes that the gray substance is designed to invigorate the action of parts of the brain and of the nerves—an office which, in his opinion, it fulfils by causing an increased afflux of blood to them. Dr. Gall had, indeed, attributed the same function to this substance, which he considered as an apparatus of nutrition and reinforcement; but he thought at the same time, that it acted in augmenting the mass of white nervous fibres, by the addition of those which originate from it. If it be observed that the cranial processes of the spinal marrow are more strong and thick when they originate from cerebral organs, rich in cineritious substance—such, for instance, as the corpora striata—this opinion acquires a very high degree of probability. Dr. Tiedeman, nevertheless, has endeavoured to controvert it; but here, it would seem, his evidence is defective. He shows that the parts which have been distinguished by the name of organs of reinforcement are at first but very thin and narrow membranes, evidently originating from the cerebral processes of the spinal marrow. He adds, that when, of two parts, one produces the other, the first must mecessarily be that which originally presents the largest volume. Yet must it be acknowledged that, in his observations on the cortical substance, there is not that degree of perspicuity which might be desired; and that, if not exactly involving a direct contradiction, his opinions respecting the period of its formation, display somewhat of inconsistency. In fact, he represents this substance as appearing subsequently to birth; and yet he asserts that, although the embryo-brain presents a pulpy mass of reddish colour, and uniform throughout, the blood vessels are most numerous in those points where the gray substance is afterwards to appear. What greater reason can there then be to admit in the embryo the existence of a medullary than that of a cortical one, under the respect of mere colour alone. In the second place, even admitting, with Dr. Tiedemann, that the formation of the cineritious substance really takes place subsequently to the period of birth, it by no means necessarily follows that the only use of this substance is to produce a sort of local erection by inviting an augmented flow of blood. The evident increase of the medullary fibres which traverse it—an increase more than once noted by Dr. Tiedemann himself,—proves that Gall is not wrong in regarding it as an apparatus of supply; and that, in consequence of its profusion of blood vessels, it contributes to the increase of the medullary secretion, and to the multiplication of the fibres of the brain in those points where it is necessary that they should exist in the greatest abundance.

The continuity of the medulla oblongata and crura cerebri is now generally, but not universally admitted by anatomists. Dr. Tiedemann, however, incontrovertibly establishes it, by showing that the pons varolii is only formed about the fourth month; and that, previously to this period, nothing is interposed between the fibres of the spinal marrow and the crura of the encephalon.

He describes, in the following manner, the distribution of the processes of the spinal marrow in the interior of the brain: each of the two chords of which it is composed divides, in the medulla oblongata, into three other smaller ones. The internal or pyramidal, situated on the side of the exterior longitudinal groove of the spinal marrow, forms, till the fourth month, a large flat surface, as in birds, reptiles, and fishes; for the pyramidal eminences are not developed till the fifth month. The decussation of it with that of the opposite side, as already described by Vesalius, Santorini, Winslow, Lieutaud, Sœmmering, and Gall; but denied by Haller, Vicq d'Azyr, and Monro, is here confirmed. Dr. Tiedemann has clearly described, about the fourth or fifth week, this decussation in which the other parts of the spinal marrow do not participate —a circumstance not to be lost sight of in the explanation of a number of physiological and pathological phenomena. The middle, or olivary chord is placed, above the preceding; and Dr. Gall is accused of having omitted, in the imperfect description given of it by him, the ascending fibres which this body furnishes to the tubercula quadrigemina, and which unite with those of the opposite side to form the vault of the aqueductus sylvii. These fibres become apparent, when a thin layer of the amorphous medullary substance is removed from the body which supports the tubercles. The other fibres of the chord proceed anteriorly in the optic thalami, where they unite with those of the internal chord. The corpora olivaria do not appear till towards the close of the sixth month or commencement of the seventh. Here Dr. Tiedemann again takes occasion to show that his countryman is deceived in considering these bodies as ganglia from which the chords themselves originate. Lastly, the external or cerebellic chords (the corpora restiformia of modern anatomists) arising from the lateral and posterior part of the medulla, form the expanded parietes of the fourth ventricle, and afterwards penetrate into the cerebellum.

The internal and middle chords, uniting, dip into the optic thalami, or form, by expansion, these bodies. The fibres composing them are there very perceptible, if a thick pulpy stratum be scraped from their superior and internal surface. From the internal side some fibrous portions are detached, and take a direction externally towards the mamillary eminences. All the other fibres continue to proceed from behind anteriorly, and from within outwardly, beneath the corpora striata, to the hemispheres of the brain. Their radiation, or fan-like disposition, is perceived on separating the corpora stiata from the crura cerebri, and turning them back. At the same time may be observed several fibres which run into these bodies. The fibres engaged in the hemisphere take a direction anteriorly, posteriorly, and laterally; afterwards rise upwards, and then turn inwards: the hemispheres of the brain are, therefore, membranes reflected upon themselves from without inwardly, and from before backward; which gives rise to the radiation of the fibres of the crura cerebri. Hence it is easy to comprehend why they present greater thickness externally than internally. This disproportion results from the fibres of the crura cerebri on the external side being very compact; while, on the internal side, they have, by expansion, lost much of their thickness. Thus also it happens, that in the fœtus the roof of the lateral ventricles, instead of being flat, and on a level with the corpus callosum, presents an arched form, and rises above this transverse septum. It afterwards descends gradually in proportion as the mass of diverging fibres acquires an increase of weight and volume. The strongest proofs that can be given of the correctness of these different assertions is, that when the brain, at the close of the second month, yet quite albuminous, does not display its organization till after a long immersion in alcohol, the hemispheres represent two real, but extremely delicate membranes produced by the expansion of the crura cerebri, and which are not only continued on the optic thalami, but are yet free in their internal and posterior borders. About the third month they may still be readily, and without any laceration, unfolded as a plain membrane. For this purpose, it is only necessary to revert them with a little precaution externally.

Yet Dr. Tiedeman, besides the radiation of the fibres in the direction just indicated, and which is the principal, admits another circumferential one: this consists of fibres formed upon the first set of arched fibres, and proceeding directly outward. He explains the formation of this second order of fibres by observing, that the vessels of the pia mater, which are evidently destined to secrete and nourish the cerebral substance, separate from the blood the mass of which it is formed; that this, therefore, is deposited in strata from within outwardly, and crystallizes, if the expression may be employed, under the form of fibres, which emplant themselves into those previously existing.

The growth of the pia mater, and gradual opposition of new strata, cause the parietes of the hemispheres to increase in thickness. In favour of this explanation, an attentive survey of the substance of the encephalon furnishes many arguments. If the pia mater be detached from the brain, parcels of the cerebral substance remain adherent to its internal surface; because the exterior, having been last deposited, is yet attached to the vessels of the membrane. This superior stratum of the encephalon, when exposed, appears soft and destitute of fibrous structure. The microscope shows the existence in it of numerous minute globules. On a division of the brain, one discovers the fibres whereon this thin stratum of formless pulp rests, which has not yet had time to assume a fibrous disposition. It is by this second circumferential radiation of nervous fibres that Dr. Tiedemann explains the formation of the convolutions, which scarcely show themselves till towards the seventh month. Dr. Gall has nearly said the same as to the distribution of the crura cerebri in the hemispheres across the optic thalami and corpora striata; but he differs in his theory of the convolutions; these he represents as proceeding from the folding of the membranes of which the hemispheres are originally formed. Observation and reasoning alike concur in showing the accordance of Dr. Tiedemann's opinions on this subject with nature; for the hemispheres are smooth during the whole time that their parietes present but little thickness; while, at this period, they ought, according to the received hypothesis, to be more wrinkled than at any other: nor, moreover, are the convolutions at all perceptible on their internal surface—that is, in the interior of the lateral ventricles. The method which Dr. Gall employs to show that the convolutions of the brain may be unfolded into one plain expanse of membrane, invariably produces, in our author's opinion, rupture of the interior strata of fibres, sent from without inward by the crura cerebi, and is utterly inconclusive. From this statement it is obvious that Dr. Tiedemann does not consider the convolutions to be folds adherent by one of their surfaces, as Gall has depicted them.

It follows, from this disposition, that the lateral ventricles are formed later than the canal of the spinal marrow, and the third and fourth ventricles. In other respects, Dr. Tiedemann agrees with his celebrated countryman; for he attaches little importance to the ventricles, and regards them as, like the other cerebral cavities, the simple result of the mechanism of organization, and destined to afford to the pia mater a more extensive surface for the transmission of blood to the substance of the encephalon.

That, with some slight modifications, Dr. Tiedeman, adopts the opinions of Gall, Reil, and the Wenzels, with regard to the distribution of the fibres sent off by the crura cerebri, has just been seen. It is not the same with the system of converging fibres for the apparatus of the commissures, which he rejects as one of the chimeras engendered in the imagination of Dr. Gall. According to the latter, the converging fibres proceed from the gray substance of the convolutions, cross those which ascend from the crura cerebri, and take an inward direction to give origin to the corpus callosum. This, according to Dr. Tiedemann, is incorrect; for the corpus callosum already exists in the fœtus about the fourth or fifth month; a period when the brain exhibits neither convolution nor cortical substance. It is obvious, then, that the converging fibres cannot arise from parts which have no existence; and Dr. Gall would have been convinced of it by collating his descriptions with his figures, which are strikingly exact. The corpus callosum is, in fact, formed by the union of the fibres which ascend from the crura cerebri, and which, having acquired sufficient length, unite transversely with those of the opposite side. Hence it happens, that without existence during the first months, it afterwards gradually increases in proportion as the fibres of the hemisphere are elongated, and forms from before backward, extending posteriorly as the hemispheres reach the tubercula quadrigemina, and afterwards the cerebellum. Reil fell into the same error as Dr. Gall, and made a particular and distinct system of transverse fibres of the corpus callosum. This happened from his having restricted his inquiries solely to the adult brain, and not having clearly appreciated the laws which regulate its formation: yet ought he to have been aware that this was an erroneous manner of viewing the corpus callosum, since he states that he had observed, in an adult whose brain was enormously distended by a dropsy of the ventricles, that the fibrous fasciculi of the corpus callosum, and those of the cruri cerebri, met at a sraight line on the border of the arched and anterior part of the corpus striatum. Perhaps he had even imbibed a confused notion of his mistake; for, after having detailed in his *Archives* the interesting case of a healthy but idiotic woman, aged thirty, who had been cut off by apoplexy, and in whom the corpus callosum was found wholly deficient, he inquires whether such defect might not be the result of an obstacle to the primordial formation of the brain. This, then, nothing more than a simple conjecture, has since been established as an incontestible truth by the observations of Dr. Tiedemann.

In treating on the fornix, our author shows that Dr. Gall has mistaken its structure. This anatomist classes it among the commissures of the brain, and thinks it also formed by the converging fibres. Reil was more correct upon this subject; and the description which he has given of the fornix absolutely accords with that of Dr. Tiedemann. According to them, this portion of the brain is formed from above downward, and from before backward. Its anterior pillars result from fasciculi of fibres which shoot out from the optic thalami, make a turn, and then rise, after having descended into the mamillary eminences. Dr. Gall, if he have not correctly described this disposition, has, at least delineated it with the utmost accuracy. The fornix, like the corpus callosum, extends horizontally backward, in proportion as the mass of the hemispheres becomes more developed.

It is thought by most anatomists, that the laminæ of the septum lucidum descend from the corpus callosum to the fornix. Dr. Tiedemann shows the contrary, and proves, from the direction of their fibres, that they originate from the anterior pillars of the fornix. Thus he positively assigns to it a place among the cerebral organs; while, by Gall and Reil, it has been classed among those objects whose connexions and office are yet unknown. The cavity which intervenes between the parietes of the septum presents backward in the fœtus, a small triangular orifice, situated betwixt the anterior pillars of the fornix and the anterior commissure. This orifice establishes a communication with the third ventricle; and through it the pia mater penetrates into the cavity of the third ventricle. Dr- Tiedemann has sometimes found it open in the adult; whence it follows that the ventricle of the septum is not so absolutely destitute of connexion with the other ventricles of the brain as most anatomists contend.

Dr. Gall has committed, with regard to the anterior commissure, the same error as he had previously done respecting the corpus callosum and fornix; for he attributes its origin to his imaginary system of converging fibres. Willis had before represented it as proceeding from the corpora striata, which approaches nearer to the truth; and professor Chaussier has derived it with yet greater correctness from the crura cerebri. Dr. Tiedemann unquestionably proves that it originates from the fibres of these last-mentioned bodies after their issue from the corpora striata. Some of these fibres proceed anteriorly, bend inwards, and unite with those of the opposite side; so that the anterior commissure, the traces of which are only perceptible about the third month, is a medium of union between the radiations of the crura cerebri, the corpora striata, and anterior lobes of both sides.

In the pineal gland and its pedunculi, Dr. Gall sees only a simple gland; but by Dr. Tiedemann it is considered as a real commissure of the two swellings of crura cerebri, or of the optic thalami, strengthened by an accumulation of grey substance.

In describing the tubercula quadrigemina, of which Reil alone had previously exhibited the structure with any thing like correctness, our author confirms the opinion of those anatomists who regard the anterior tubercles as the origin of the optic nerves; but he thinks not with Gall and Cuvier, that the posterior give rise to the olfactory; otherwise the long discussion into which he enters respecting what ought to be called tubercula quadrigemina in birds, although clear and interesting, contains nothing but what has already been said by Gall and Cuvier.

Reil has described, with greater precision and perspicuity than Dr. Gall, the distribution of the fibres of the crura cerebri at their issue from the optic thalami, which seemed to him destined not only to increase them, but to augment their extension, and impart to them a circular and radiated direction. Dr. Tiedemann adds little to what is already known respecting these bodies. The crura cerebri possess more fibres on their issue than at their entrance; that is, the succession of numerous vessels which run into these ganglia, give activity to nutrition, increase the mass, and make them the principal focus of vitality, as well of the cerebral processes of the spinal marrow, as of their lateral expansions, the hemispheres. The same observations are applicable to the corpora striata, as Gall and Reil have long since shown.

The Wenzels were the first who depicted the cornu ammonis as a fold of the hemisphere formed by the crus cerebri, and united to the posterior pillar of the fornix, to form the grey corpus fimbriatum. Dr. Tiedemann sees, in the hippocampus, a mass of reinforcement of the posterior pillar; because a thick stratum of cineritious matter is deposited upon the descending fibres of this pillar

Dr. Gall, again makes the tuber annulare to proceed from the converging fibres. These he supposes to issue from the grey substance of the cerebellum, of which he with reason calls the pons varolii the great junction or commissure. The inaccuracy of this assertion Dr. Tiedemann attempts to prove by the same arguments as he has employed on other occasions. The pons varolii, he contends, already exists at a period when there is yet no grey substance on the surface of the cerebellum. It arises from the medullary centre of the latter, and not only increases in breadth and thickness, in proportion as the corpora fimbriata and the hemispheres of the cerebellum are developed, but, on examining it in the vertebral animals, it will also be observed to increase in dimensions in the same proportion as the medullary masses which give rise to it.

The opinions of Dr. Tiedemann respecting the relations of the spinal marrow and the brain, have been reserved, in order that they may be last exposed. From the details which we have already entered into, the nature of them will be readily foreseen. By Galen, Riolanus, Fallopius, Willis, Vieussens, Winslow, Haller, and others, the spinal marrow was considered as a prolongation of the encephalon; and this opinion the greater number of anatomists adopted. Dr. Gall, on the other hand, asserted that the brain is an elongation of the spinal chord. Such view of the subject, however, is not entirely novel; for it has been obscurely hinted at by many of the Grecian writers: and Bartholine, Malpighi, and especially Fracassati, have not only embraced, but attempted to demonstrate it. All the difficulties which have been started against the doctrine of his countryman are completely done away by Dr. Tiedemann's researches, the interesting results of which may be reduced to the following principal heads:—

1st. In the commencement of pregnancy, especially about the second month, the earliest period at which the brain can be rendered perceptible by the action of alcohol, this organ is very small in proportion to the spinal marrow. In fact, it results from the prolongation upward and forward, of the two principal chords, the olivary and pyramidal. All its superior part is open, or, more properly speaking, forms a broad gutter, which at once comprehends the third venticle, the aqueductus sylvii, the fourth ventricle, and calamus scriptorius. This gutter is uninterruptedly continuous with the canal which traverses the whole length of the marrow.

2dly. The cerebellum evidently originates from the spinal marrow; from the lateral parts of which arises, on each side, a small flattened chord. These two, at first so distinct and separate that they may be readily parted without laceration, afterwards unite so as to form the roof of the fourth ventricle. Then only the brain, viewed from above, ceases to represent a gutter; and the laminæ and branches of the cerebellum are formed at a much later period.

3dly. The mass which supports the tubercula quadrigemina equally shows itself in its origin, under the form of two small thin membranes, which arise from the olivary chords of the spinal marrow, and which, when they cease to be distinct, represent a vault covering a large ventricle, whose successive contraction gives rise to the aqueductus sylvii.

4thly. The pyramidal chords of the spinal marrow, which take a direction below upward, and from behind forward, after having produced two swellings, or ganglia, the optic thalami, and corpora striata, each terminated by a lamina, which bent from before backward, and from the side towards the superior and internal part, forms the commencement of the hemisphere of the brain. These membranes and thin hemispheres are so small at the second month, that they scarcely cover the corpora striata. In proportion as they increase they extend backward, and cover, at the third month, the optic thalami; at the fourth, the tubercula quadrigemina; and, at the sixth or seventh, the cerebellum. The lateral ventricles result from their invertion.

5thly. The medullary fibres of the pyramidal chords, previously to the formation of the tuber-annulare, are immediately continuous with those of the crura cerebri; from whence the eye may readily trace them in the optic thalami, and corpora striata, and see them afterwards spreading and radiating in the hemispheres.

6thly. The parietes of the hemispheres gradually increase in thickness in proportion as new strata of cerebral substance are deposited on their surface; and convolutions are not decidedly seen till towards the close of pregnancy.

All these combined facts clearly emonstrate, in the opinion of Dr. Tidemann, that the brain and cerebellum proceed from the spinal marrow; or that, to employ a modern expression; they are an efflorescence of it. In running through the scale of animals, ample conformation may be found of the assertions here advanced. The structure of the encephalon and spinal marrow becomes complicated in proportion as we ascend from fishes to reptiles, birds and mammalia. If the contrary opinion were correct—if the spinal marrow were derived from the brain, the cerebrum and cerebellum must necessarily be found the first formed in the fœtus, which is not the case. It is equally necessary that, in the animal scale, where it is impossible to mistake a gradation in the figure and development of the organs, that a complete brain should exist previously to any trace of a spinal marrow; but this is never observed. Comparative anatomy, on the contrary, shows that the spinal marrow is very large in the inferior classes of animals, while the brain forms but a small and delicate prolongtion of it; and in ascending from reptiles to birds and mammalia, it is seen gradually to increase in volume and complication, as absolutely takes place in the fœtal encephalon. Other arguments might be adduced in support of this proposition; but they are deemed superfluous by Dr. Tiedemann, who would despair of convincing any one not perfectly convinced by the facts already enumerated.

From the imperfect sketch which has just been traced, some idea may be formed of the nature and merits of Dr. Tiedemann's work. That he has not wholly kept clear of slight inaccuracies must be allowed; nor will it be thought wonderful when the difficulty and complication of the subject, and the soft and delicate structure of the organs which he has been examining, are duly considered. He relates, in a plain but sometimes heavy style, the result of his observations and researches on the anatomy of the brain; and his luminous descriptions are greatly assisted by carefully-drawn figures, wherein are exposed numerous minute details, of which it would be otherwise difficult to convey a correct idea. It moreover appears, that he has preserved in his museum, specimens of the embryo brain in every stage of its development, in order to convince the sceptical of the accuracy of his assertions. This method he considers indispensable at a period when, unfortunately, we too often see described and delineated objects of which nature has never exhibited the model.

Upon the whole, the work of Dr. Tiedemann is perhaps one of the most extraordinary productions which has appeared in the present century; and we have little doubt but that the assertions contained in it will acquire ample conformation from the labours of future anatomists: for from the precept of our immortal Bacon, which he has selected for his motto, and which we close our long analysis with strongly recommending to the attention of all medical writers, he seems never to have wilfully or consciously deviated: *non fingendum est, aut excogitandum, sed quid natura faciat, observandum.*

De L'Auscultation médiate, ou Traité du Diagnostic des Maladies des Poumons et du Cœur, fondé principalement sur ce nouveau Moyen de l'Exploration, par R. T. H. Laennec, D. M. P. Médecin de l'Hôpital Necker, &c. &. 2 tom. à Paris, 1819.

(From the Quarterly Journal of Foreign Medicine and Surgery for 1819—20.)

This is a very interesting and important work. It submits to the world a new system of diagnosis, applicable to those diseases in which the obscurity and uncertainty of the diagnostic means at present in use, have often been acknowledged and lamented.

The author, M. Laennec, is a pupil of the celebrated Corvisart, and has, for the last eighteen years, devoted himself to the study of pathological anatomy, the fruits of which are found in the variety of new and interesting observations with which he has enriched his work. The observations before us are the result of three years exclusive attention to the subeject.

To disarm any prejudice which the title of the work may create, and engage a favourable attention to the author's subsequent details, we shall prefix to our own analysis of the work, the opinion of the committee of the Institute who were appointed to examine its merits.

The following extract is from the proceedings of the sitting of 29th June, 1819:—

"In one of the preceding sittings the Academy deputed Messrs. Portal, Pelletan, and Percy, to make a Report on a Memoir, read by Dr. Laennec, and entitled '*A memoir on* 'AUSCULTATION, *by the aid of different acoustic instruments,* '*employed as a method of examination in diseases of the tho-* '*racic viscera, and particularly in phthisis pulmonalis.*"

"The trivial advantages which are derived in most cases from the percussion of the chest, according to Avenbrugger's method, and the facility with which sound is transmitted through solid bodies, suggested to the author the idea of attending, by the aid of intermediate substances, to the different sounds which the movements of the respiratory and circulatory organs may produce in the interior of the chest, and to inquire whether the sounds in question gave more certain signs than those which we already knew, relative to the diseases of the organs contained in this cavity. He believed this question might be answered in the affirmative. The *auscultation* of sound produced by the mechanism of the voice and respiration,[*] by the pulsations of the heart, and in certain cases by those of the aorta, is, according to him, possible and even easy, by means of an intermediate body, which, according to circumstances, may be a full cylinder, a thick tube, or a tube widened at one of its extremities in form of a funnel. The first instrument is most convenient for ascertaining the pulsations of the heart and aorta; the second serves for examing the voice, and the third for the various sounds produced by respiration."

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[*] The author uses another term, which we find great difficultv in translating—it is râle. He explains the sense in which he uses this term elsewhere, (vide S. 474.) "Under the name of 'râle' is commonly denoted that confused murmuring noise which is heard in the dying, caused by the air passing with difficulty through the saliva, which the lungs are no longer able to expel. For want of a more generic term, I take the word in a more extended signification, and understand by 'râle' all the noises produced by the passage of the air, during the act of respiration, through whatever fluids may be found in the bronchiæ or pulmonary texture." Of these the author enumerates four principal varieties, which he thus describe.:—1. Le râle humide, ou *crepitation.* 2. Le râle muqueux, ou *garguillement* 3. Le râle sec sonore, ou *ronflement.* 4. Le râle sibilant sec, ou *sifflement.*"

The author presents to the academy only a part of his researches relative to the investigation of the voice. We subjoin a short analysis of it.

"The instrument which M. Laennec uses for this purpose is a cylinder a foot long, sixteen lines in diameter, and perforated in its centre by a canal about three lines in diameter. When this cylinder is applied to the chest of a healthy person, in the act of speaking or singing, nothing is heard but a kind of low murmuring (frémissement) more distinct in some parts of the chest than in others. But, when there is an ulcer in the lungs, this murmuring is changed, and the effect is altogether singular. The voice of the invalid then ceases to be heard by the ear which is disengaged, and it comes to the observer entirely through the canal formed in the cylinder. We have established this fact on many consumptive persons whom the author has brought to us. It appears to us striking, and very likely to furnish a certain diagnostic sign of some changes in the lungs, which in the actual state of medicine could scarcely be imagined. M. Laennec attributes this phenomenon to the stronger sound of the voice in a cavity more extended than the bronchiæ. His opinion appears the more probable, as the same phenomenon occurs when the cylinder is applied to the trachea or larynx. This phenomenon, to which M. Laennec gives the name of pectoriloquism, presents several varieties, which the author distributes into three classes, under the names *perfect*, *imperfect*, and *doubtful* pectoriloquism. Many of these varieties point out circumstances of the utmost importance relative to ulcers of the lungs, and especially as to their size, their state of fulness and emptiness, and the consistence of the matter contained in them. The author has confined himself to the simple exposition of these facts, and of the consequences which may be drawn from them in the diagnosis of phthisis pulmonalis. He has not thought it right to take up the time of the academy with the other practical inferences which it is possible to deduce from them.

"Although the study of pulmonary consumption by the auscultation of the voice is the principal object of the Memoir we are now noticing to the academy, we have thought it incumbent upon us to verify also what the author advances concerning the auscultation of respiration, and of the heart's pulsations. We have, in consequence, listened with the cylinder to the respiration of a healthy man, in different parts of the chest, and we have found that it is heard distinctly in all parts of this cavity which correspond to the lungs. We have found likewise that the motions of the heart are heard in the most distinct manner; and therefore it appears to us, that the author's assertions as to the possibility of obtaining by these two kinds of auscultation, certain signs of many diseases of the lungs and heart have, at least, a very high degree of probability.

"The idea of applying the ear to the chest, and of ascertaining in this way the symptoms of the alteration in the organs which it contains, is not altogether new. Hippocrates (Lib. II. de Morbis) recommends this application at the side of the thorax, to discover the existence of empyema. But this mode of proceeding, according to M. Laennec, absolutely gives no indication.

"Some physicians had also been long in the practice of applying the ear to the region of the heart, in order to discover more accurately the strength of its pulsations; but this method had never given satisfactory results, for reasons which the author in part explains, and which he proposes to develop with more details in another memoir.

"Your committee, in rendering to Dr. Laennec (already most creditably known by his learned researches on different medical subjects) all the justice which is due to him, have the honour to assure the academy that this physician, of whose titles to confidence and public esteem they are not ignorant, has merited its particular favour, and a special testimony of its approbation of this new work.

(Signed) PORTAL, PELLETAN,
PERCY, *Registrar.*

"The Academy approves the Report, and adopts the conclusions.——DELAMBRE."

In a work comprising so much variety, and consisting of two octavo volumes, it is difficult to give such an abstract as will convey a correct idea of the labour and intelligence of the author, and do justice to the zeal and ability which he has displayed. His object will, therefore, be best explained in his own words. "Convinced," says he, "of the practical utility of the method of investigation which I am proposing, I have thought it my duty to neglect no means of making the practice general; and it appeared to me, that the best way in which I could do this, was to connect the exposition of this method with a more exact description than any which hitherto exists of those organic changes which it is its object to discover. This plan serves at once to render its employment more easy, to demonstrate its advantages, and to connect the remembrance of it with that of many other facts.

" The principal object of my work being to make known the advantage which may be derived from the use of the cylinder, in distinguishing the different diseases of the lungs, I have thought every thing should be subordinate to this purpose; and, even the facts from pathological anatomy; although occupying a very considerable space, are only inserted as accessaries. I have, therefore, been led to separate things, which in a treatise of medical practice, or of morbid anatomy, ought to be united. The first part of this work, for example, is almost entirely devoted to phthisis pulmonalis. Many important facts referrable to the same disease are, however, found in the second, the third, and the fourth part; because the respiration, *(le râle,)* and even the pulsations of the heart, afford indications relative to many circumstances of this disorder.

" I have cited but few authors. The path which I had to follow was nearly new. I have confined myself almost entirely to the works of M. Corvisart and M. Bayle, as presenting very nearly the actual state of our knowledge of diseases of the heart and lungs. If I have sometimes combatted their manner of viewing the subject, I hope that no one will misinterpret the motive which has led me to do so. United from the commencement of my studies to M. Bayle, by ties of the most tender friendship, and the disciple of M. Corvisart, no one has been led more than myself to appreciate their personal merit and that of their works; and although sometimes obliged, in defending the interests of science, to attack the opinions of my master and those of my friend, I do not feel the less gratitude for all that I owe them. It is more easy to cultivate a well prepared field than to clear a rough barren soil. I must, besides observe, that the works of M. Corvisart, edited by strangers, are very far from giving an idea of the author's meaning in its full extent. It is to be regretted, that his numerous occupations, and a state of deplorable bodily health, should not have permitted him to accomplish the task himself. The uncertainty in the signs attributed to each malady, the vagueness of the descriptions are sufficiently striking to those who, educated by this great physician, have so often witnessed the boldness and certainty of his diagnosis. This, however, depends in part on the circumstance, that he employed that indefinable tact which constitutes a great part of the art of medicine, and which he possessed in the highest degree."

M. Laennec begins his work with some observations on the difficulty of forming a diagnosis in diseases of the lungs. He adduces the testimony of Baglivi, to show that the diagnosis of pulmonary diseases must necessarily be incomparably more obscure than that of the affections of any other internal organ. In fact, the diseases of the brain, by no means numerous, are known, in general, by certain and striking symptoms. In the affections of the abdomen, the parietes being soft and pliant, we can feel the organs which they contain, and judge to a certain extent of their size, their position, their degree of sensibility, and the accidental productions which may be there developed. Thoracic diseases, on the contrary, being extremely numerous, and very diversified, have almost all similar symptoms. Cough, dyspnœa, and in some expectoration, are the principal and most striking; and the varieties which these symptoms present, do not correspond in a regular manner to the diversities of organic changes which occasion them; so that the most experienced physician is often at a loss. "I am not afraid," says the author, "of being contradicted by those physicians who have been employed regularly and for a certain time in morbid dissections, when I assert, that before the discovery of Avenbrugger, the half of peripneumonies and acute pleurisies, and almost all cases of chronic pleurisy, might necessarily be mistaken; and even in cases where the examination of an experienced physician might lead him to suspect something, it could seldom inspire him with sufficient confidence to determine him to employ a bold remedy in consequence of such a suspicion. Percussion of the chest, according to the method of the ingenious observer just recited, is certainly one of the most precious discoveries with which medicine has ever been enriched. It has subjected to the immediate decision of the senses many diseases which, till that time, could only have been known by general and equivocal symptoms, and has rendered the diagnosis as certain as it is easy. This method, however, leaves much to be desired. It often points out nothing in pulmonary consumption, and cannot in any case distinguish this disease from chronic peripneumony. Even in peripneumony it affords but little aid, when the inflammatory obstruction occupies only the centre of the lungs, or when the two lungs are affected slightly or nearly equally. It affords no proper signs by which to distinguish this disease from pleurisy, hydrothorax or any other effusion into the pleura. It furnishes no means of knowing pneumo-thorax, or rather it becomes an almost necessary cause of error in this case. It does not enable us to discover diseases of the heart, except when this organ is become greatly enlarged; and too often death occurs before the disease arrives at this degree. It has never given any indications of the existence of aneurism of the large vessels, but in cases where the application of the hand and even the sight would have furnished much more certain ones."

The results of percussion are besides doubtful when the absence of sound only exists in the right inferior side of the chest. They are often deceitful when the chest is deformed, even to a slight degree, by the effect of rickets; lastly, they are very uncertain, and often inapplicable, when the integuments of the chest are distended with a considerable quantity of fat. The art of percussion, besides, although very simple in appearance, requires long practice, and a dexterity which few men can acquire. The slightest difference in the angle under which the fingers strike the thorax, may lead one to suspect a difference of sound which in reality does not exist. Many physicians are unable to produce this percussion without employing such force as to make the process very painful to sick persons. And a chest, the sound of which has appeared almost dull when struck in a chamber that is small, or filled with furniture, or in a bed surrounded with thick curtains, will appear the day after much more sonorous if the experiment be made in a larger apartment, or in an arm chair.

It is in diseases of the heart especially that a more consistent and certain sign is desirable than that afforded by percussion. Some physicians have in these cases applied the ear to the region of the heart, and some the touch. But these practices are both objectionable, and cannot be brought into gsneral use, even if they were not liable to error on other grounds.

"I was consulted," says M. Laennec, "in 1816, by a young female, who had some general symptoms of a disease of the heart, and in whom the application of the hand and percussion would give unsatisfactory results on account of her embonpoint. The age and sex of the patient forbidding that kind of treatment of which I have just spoken, I brought to my recollection an acoustic phenomenon well known. If the ear be applied to the end of a beam, one hears distinctly the scratch of a pin at the other end. I imagined that one might, perhaps, draw a useful hint in the case in point, from this property of bodies. I took a sheet of paper and formed a roll of it well secured, of which I applied one end to the region of the præcordia, and placing the ear at the other end, I was as much surprised as gratified in hearing the heart beat more clearly and distinctly than I had ever done by the immediate application of the ear."

With the conviction that this method might become useful in inquiries relative to many other diseases, he commenced a series of experiments at the hospital of Necker, and obtained as the result many new signs adapted to render the diagnosis of almost all the diseases of the lungs, pleura, and heart more certain and circumstantial, according to his ideas, than the chirurgical diagnosis established by means of the sound, or introduction of the finger.

The work is divided into four parts:—

The first contains the impression produced by the organs of voice on the ear applied to the cylinder; the second, those furnished by respiration; the third, those afforded by the *râle* (see the explanation given at page 361); and by way of appendix, the results of his researches in the fluctuation of fluids effused into the cavities of the thorax; the fourth contains the analysis of the heart's pulsations in a state of health and of disease, and the particular symptoms of the diseases of the heart and the aorta.

The author made various experiments with different substances, in order to ascertain what was best adapted for the purpose of his inquiry.

The most dense bodies, as analogy would lead one to suppose, are not the best calculated for forming such experiments. Glass and metals, besides their weight, and the sensation of cold which they occasion, do not communicate so well as bodies less dense the pulsations of the heart, and the sensations which respiration produces. There is a medium, however, to be observed, and of all substances which he tried, bodies of such a density as paper, wood, and cane, are those which appeared to be preferable to all others. He observes, this result is, perhaps, in opposition to a physical axiom, but it appeared to him invariable. He also observes, that an instrument with a small hollow is indispensible for examining the voice, but a full or solid body is the best for discovering the state of the heart.

"I now," says he, "make use of a cylinder of wood, with a hollow tube in the centre, three lines in diameter, and divided in the middle by means of a screw, in order to make it more portable. One of the extremities is widened to the depth of about an inch and a half in the shape of a funnel. The cylinder so disposed is the instrument best adapted for ascertaining the state of respiration. It may be converted into a simple tube with thick sides, so as to explore the voice and pulsations of the heart, by introduçing into the funnel an end-piece of the same kind of wood so as exactly to fill it, and which is fixed by means of a small copper tube passing through it, and entering into the hollow of the sylinder to a certain depth. The instrument is a foot long, and an inch and half in diameter."

In all cases, the cylinder, or stethoscope, as he sometimes calls it, should be held as a pen in writing, and the hand should be placed very near the breast of the patient, that he may be satisfied the instrument is properly applied.

The end of the cylinder intended to be applied to the chest, and the extremity which is formed by the end-piece or cover, ought to be slightly concave. Some of the effects which are obtained by this sort of inquiry are easy to be discovered, and it is sufficient to have once *heard* them, to know them again; such are those indicated by ulcers in the lungs, excessive enlargement of the heart, fistulous communication between the pleura and bronchiæ, &c.

But there are others which require much study and practice; and, as this mode of inquiry carries the precision of diagnosis much farther than others, it is necessary also to bestow more pains, in order that every possible advantage may be derived from it. The author admits that one can scarcely acquire, except in hospitals, complete dexterity in the practice of *mediate auscultation*, insomuch as it is necessary to have confirmed, by actual inspection, the diagnosis established by means of the cylinder, to be sure of one's self and the instrument, to take confidence in one's own observation, and to be convinced by the sight, of the certainty of signs afforded by the sense of hearing. It is generally sufficient to have observed a disease two or three times, to learn to know it again thoroughly; and the greater part of pulmonary affections, and those of the heart are so common, that after having studied them for eight days in an hospital, there will remain scarcely more than a few rare cases, which will almost all be met with in the course of a year, if all the sick be carefully examined.

On Exploration of the Voice in general.—When a healthy man speaks or sings, his voice resounds in the interior of the chest, and produces in the whole extent of the parietes of this cavity a sort of noise (frémissement) easy to be distinguished by the application of the hand. This phenomenon no longer exists when, the effect of any disease, the lungs have ceased to be pervious to the air, or are found to be separated from the thoracic parietes by a liquid effusion. This sign, however, is of but little importance, as many causes may vary the intensity of the sound, or even entirely destroy it. It is not very perceptible in fat persons, in those whose integuments have a certain flaccidity, nor in those who have a sharp or weak voice. In men of the best conformation it is not very evident, except at the anterior superior part of the chest, upon the ribs, and in the middle of the back. Lastly, this peculiar noise, having, in no case, any great intensity, it is difficult to make comparative examinations with regard to it; and consequently to draw from it results applicable to the diagnosis of pulmonary diseases. As it is not very easily perceived but by applying the whole hand to the chest, one can only conclude when it exists, that a great portion of the lungs is pervious to air; but one cannot precisely determine the point where it is impervious, if it takes place towards the inferior part of the chest, as occurs very frequently in peripneumony.

But in order to complete the series of experiments, the author endeavoured to establish even to what point the cylinder communicates to the ear the sound (le frémissement) of the action of the thoracic *parietes*.

The points where the intensity is greatest are at the armpit, the back, between the internal edge of the shoulder blade and the vertebral column, and the anterior superior part of the chest, towards the angle formed by the union of the sternum with the clavicle. When the cylinder is applied to these points, the voice appears much stronger aud nearer the observer than it does to the naked ear. In the other parts of the chest, on the contrary, especially below and behind, it appears weaker and more distant.

In prosecuting his researches as to the comparative sound of the voice in a number of healthy and diseased subjects, he was struck by a very singular phenomenon. The case in which it occurred was that of a female about twenty-eight years of age, who was attacked with a slight bilious fever, and a recent cough, which presented no other character than those of pulmonary catarrh. On applying the cylinder below the middle of the right clavicle, and directing the patient to speak, her voice seemed to proceed directly from the chest, and to pass entirely through the central canal of the cylinder. This phenomenon only took place to the extent of about a square inch. Nothing like it was found in any other part of the chest. Not knowing to what this phenomenon was to be attributed, M. Laennec examined, in regard to it, the most part of the patients then in the hospital, and he discovered it in at least twenty of them. Nearly all were consumptive and arrived at an advanced stage of the disorder; in others the existence of tubercles was still doubtful, although there were reasons to fear their presence. But two or three, like the woman who had first exhibited the phenomenon, presented no symptom of this disease, and their embonpoint, as well as the state of their strength, seemed even to remove all fear with regard to it.

From that time, however, he was led to suspect that the phenomenon in question might be owing to those irregular cavities which are produced by the softening of tubercles, and known by the name of pulmonary ulcers. The existence of this phenomenon, in subjects who had no symptoms of phthisis pulmonalis, did not destroy this conjecture; because it often happens that we meet with tubercles, and even ulcers in the lungs, in subjects dead of acute diseases, in whom phthisis has been always latent. The most part of the patients who exhibited this phenomenon having died at the hospital, he was enabled to confirm by actual inspection, what he had so rightly conjectured. In all of them he found cavities more or less large, owing to the softening of the tuberculous matter, and communicating with bronchial ramifications of a variable diameter. He found that *pectoriloquism* (as he named this phenomenon) was by so much the more decided, as the ulcerated cavity was nearer to the surface of the lungs, and that it never was more striking than when, in consequence of this viscus adhering intimately to the costal pleura, the parietes of the thorax formed almost immediately a portion of those of the ulcer—a circumstance which, as is well known, often happens.

He was, therefore, naturally led to think, that pectoriloquism is owing to the stronger and more perceptible sound of the voice, in points where it is re-echoed by a more solid and extended surface. Consequently he presumed that a phenomenon analogous to it should take place, when the cylinder is applied to the larynx and the trachea of a healthy man. His conjecture was found to be correct. There is a perfect identity between pectoriloquism and the voice proceeding from the larynx through the cylinder, and this experiment is even a very good means of giving an exact idea of pectoriloquism, when one has no such patients at one's disposal.

Consumptive persons forming more than a third of the patients in the hospitals of Paris, numerous facts enabled him to ascertain the varieties in the phenomenon, the practical inductions, and the cases of exception.

Of Pulmonary Consumption, or Tubercular Affection of the Lungs.—The cavities which produce pectoriloquism, are those which are commonly called ulcers in the lungs. They are not, as has been generally thought, and as the generality of practitioners still think, an effect of the inflammation and suppuration of the pulmonary texture. The recent progress of morbid anatomy has clearly demonstrated that these cavities are owing to the softening and consequent evacuation of a peculiar kind of accidental production, to which modern anatomists have given the name of tubercle, a word formerly applied, in general, to every kind of tumour or preternatural protuberance. The existence of tubercles in the lungs is the cause, and constitutes the proper anatomical character of phthisis pulmonalis.

The author here wishes to be understood as treating only of tubercular consumption. He thinks that no other species of pulmonary consumption ought to be admitted, unless nervous phthisis or catarrh, assuming the appearance of tubercular phthisis. All other species are at bottom, he supposes, tubercular consumption, and only differ according to the cause to which we attribute, perhaps gratuitously, the development of tubercles. Tubercular cavities differ essentially from an ulcer in this, that the latter extends itself by corroding the texture in which it is found, whilst the former, being the spontaneous destruction of an accidental production, which has removed and pressed against, but not destroyed the pulmonary texture, have no tendency to enlarge themselves at its expense. Bayle has described the progress of the development of these morbid productions more clearly than any one before his time. M. Laennec, however, with a view to the more complete elucidation of his subject, and to rectify or extend some of M. Bayle's observations, thinks it necessary to give an abridged description of the characters of tubercles and their mode of development. For this able description we must refer our readers to the work itself, and proceed to that part which more immediately treats of the author's new method of inquiry.

The most common seat of these excavations is in the superior lobes of the lungs: it is in this part that tubercles are usually first developed; consequently it is there that they are most frequently found enlarged and advanced; and for the same reason, the points of the chest where pectoriloquism is most frequently discovered are its anterior superior part, the arm-pit, the space comprised between the clavicle and the trapezius muscle, and the superior and inferior spinous fossæ of the scapula. The thickness of the scapula and its muscles does not hinder the perfection of the phenomenon, although it appears to render the voice less sonorous.

Pectoriloquism is evident or doubtful: it is evident when it presents completely the characters mentioned above. As often as we meet with this phenomenon, even if it be perceptible but for a few moments at a time, we may pronounce with certainty that there exists in that part of the lungs corresponding to the point of the thoracic parietes where the sign is manifested, a preternatural cavity communicating with the bronchiæ. The characteristic phenomenon of pectoriloquism becomes more striking if we stop the free ear with the hand. We then discover, with the strongest evidence, that the voice of the patient and the articulation of his words are transmitted through the cavity of the cylinder.

Pectoriloquism is doubtful, when in applying the cylinder upon a certain point of the chest, the voice of the patient appears a little sharper and slightly feigned, like that of ventriloquists, or that it resounds under the cylinder with more force than it does to the naked ear; without it otherwise appearing to pass through the tube. We may have an exact notion of doubtful pectoriloquism by applying the cylinder between the inner shoulder blade and the vertebral column, towards the points corresponding to the origin of the bronchiæ, on a lean subject with a sharp voice, but otherwise healthy. It naturally exists in persons who unite these conditions, and even more or less in all, for the reasons above stated.—

In thin or emaciated children, whose breasts are straight, the proximity of the bronchiæ affords even sometimes at this part an evident pectoriloquism, although the lungs may be sound. We ought not, for the same reason, to draw unfavourable conclusions in many cases of doubtful pectoriloquism, when it only exists in this point, under the arm-pit, or towards the junction of the sternum and clavicle. We may even extend this proposition to all the anterior superior part of the chest as high as the third rib, when the phenomenon is very doubtful, and that it exists equally on both sides; for the upper part of the superior lobe of the lungs contains, in a relative proportion, more bronchial ramifications than the other parts of this organ; and their branches, sometimes very superficial, often produce the phenomenon in question, especially when the lungs are adhering to the pleura. But when doubtful pectoriloquism is met with in those parts of the chest situated below the third and fourth rib, or only on one side, and not in the other, it is at least a strong presumption of the existence of a morbid cavity; and, if at the time it does not exist in the other points above-mentioned, this equivocal presumption has a complete certainty, and we may safely conclude that the cavity is situated deeply in the pulmonary texture, or that it is still in a great measure filled with tuberculous matter imperfectly softened. In whatsoever point of the chest it may be, when the resounding of the voice is much stronger than on the opposite side, and especially when it is so intense as to appear much nearer the ear of the observer than when he listens with the naked ear, the sign is as certain as if the voice passed evidently through the tube, and pectoriloquism is *imperfect* and not *doubtful.*

Moreover, between the most perfect pectoriloquism and thatc whih is altogether doubtful there are degrees which are easily learned by practice, and which it would be as superfluous as difficult to describe. Thus, for example, the voice seems sometimes to be a little introduced into the extremity of the tube, but not to be capable of passing through it entirely. But the comparison of signs obtained by respiration with those of percussion, enable us to appreciate the importance of imperfect or doubtful pectoriloquism.

Pectoriloquism is so much the more evident as the voice of the patient has a sharper tone. Women and children present it in the most striking manner; and are consequently those on whom we must be most on our guard against that doubtful pectoriloquism which exists naturally in some parts of the chest. In men with a very deep and grave voice, on the contrary, the phenomenon is often imperfect, and sometimes doubtful, even when there are excavations on the lungs in a state best fitted to produce it. The more deep or hollow the voice, and the more strongly it resounds on the interior of the chest; the murmuring (frémissement) of the thoracic parietes, of which we have spoken above, becomes so intense, that it in a great degree masks or covers pectoriloquism. The voice, being too much agitated, and trembling, as it were, seems as though it could not enter into the tube, and resounds only at its extremity with a strengh and volume often double or triple what it presents to the ear that remains free. It seems, in a word, as if the patient spoke in a speaking trumpet close to the observer, and not as if he spoke to him in the ear by means of a tube. But this phenomenon, though it be less extraordinary than pectoriloquism, is not the less a very characteristic and sufficient sign in practice, especially when it only exists at one side. It may be rendered still more striking, as we have said, by stopping the other ear. The difference in the sound of the voice in the diseased and the other parts of the chest, become then so very great, that the certainty of an ulcerated cavity is as complete as if it were announced by the most perfect pectoriloquism. There cannot exist any doubt on this head, except when the phenomenon is less intense, and is observed equally on both sides of the chest.

When the pulmonary cavities are extremely large, pectoriloquism is changed into a phenomenon analogous to what is observed in men who have not a very low voice, and sometimes even in women whose voice is not very sharp. Thus, when in a consumptive person, evident pectoriloquism comes to be changed into a stronger sound, analogous to the voice transmitted at a distance by a trumpet or paper cone, we may conclude that new tubercles have become softened, aud that they have produced cavities opening into the first, and consequently that the disease is gaining ground.

The cylinder widened at its extremity in the shape of a funnel utters pectoriloquism less than the simple cone or tube, and affords nearly equal intensity of sound; for this reason it may sometimes be employed with advantage in subjects with a low and hollow voice. The author remarks, that he applied his ear upon the chest of a consumptive person who afforded the sign of pectoriloquism in the highest degree, and he only obtained the doubtful sign just described, and even with less intensity of sound than when he used the tube, and especially the cylinder, hollowed like a funnel. It is scarcely necessary to say that the full cylinder does not afford pectoriloquism. It produces, with a less intensity of sound, nearly the same effect as the immediate application of the ear. The cone cylinder gives a sensation more resembling the true pectoriloquism, without doubt owing to the multitude of small tubes of which it is composed.

The most evident pectoriloquism may present differences sufficiently remarkable and independent of the instrument employed. Sometimes the voice passes continually through the cylinder, sometimes the phenomenon is in some degree intermitting. This sort of intermission appears to be caused by the cavities opening into the bronchiæ being obstructed by phlegm or tubercular matter; but the diagnosis is not the less certain. Even perfect and continuous pectoriloquism is sometimes interrupted by this latter cause. Very often, after some hours, or even a few minutes, this phenomenon is not to be discovered in patients who have presented it in the most striking manner. The rattling (râle) which we then hear in the part where pectoriloquism existed, leaves no doubt concerning the cause of its cessation; for this reason, we ought never to pronounce that a phthisical person does not afford this sign, until we have examined him many times, at different hours of the day, and particularly immediately after he has coughed.

It sometimes happened to the author, while examining consumptive persons, in whom pectoriloquism existed in the back, and whose voice was weak, that he heard their answers perfectly by means of the cylinder, whilst at the same distance he could only hear a few interrupted expressions with the naked ear. Several other varieties of this phenomenon are detailed with much minuteness by the author, which every one desirous of perfecting himself in this new art should study diligently.

We have been so far minute, that we may do justice to our author's candour, in himself communicating so freely the difficulties and exceptions which may be urged against the general adoption of the method, by those who may consider it too laborious for common use. In making the experiment with the instrument used in exploration, the author always took care to turn the patient's head on the side opposite to that which he examined.

In more than two hundred consumptive persons, dissection confirmed the accuracy of the prognosis which he had given by the aid of the cylinder; for in all of these he met with ulcerated cavities in the lungs, when he had previously found pectoriloquism in an evident manner; and as in the most part of these subjects he had observed the phenomenon in many points at once, he asserts boldly, that he has many hundred positive observations on this fact, and not one negative. On the other hand, he never found pulmonary excavations communicating with the bronchiæ; in any subject whom he had carefully examined in a regular manner for a certain number of days without meeting with pectoriloquism. Although the superior lobes of the lungs are the most usual seat of ulcerated cavities, we ought not to be satisfied with only examining the points above alluded to, if pectoriloquism is not found there. It sometimes, though rarely happens, that cavities exist in the centre of the lungs at their anterior, middle or lateral parts, and even towards their inferior edge, the superior lobes being altogether sound.

Two or three times only, cavities, more or less extensive, were found in subjects that gave no evident signs of pectoriloquism: but these cavities were almost entirely filled with softened tuberculous matter, and they only communicated with the bronchiæ by one or two openings situated in the posterior or inferior parts. These, and other similar cases, are no more than exceptions which confirm a general rule; for it is evident, that pectoriloquism cannot take place without the communication of a cavity, partly empty, with the bronchiæ.

From all his preceding remarks, the author concludes that pectoriloquism is a true pathognomonic sign of phthisis pulmonalis, and that it is sometimes indicative of it long before any other could lead us to suspect it. In short, it is the only one that can be regarded as certain.

The following observations are certainly judicious, and confirmed by every day's experience.

Cough, dyspnœa, purulent expectoration, hectic fever, hæmoptysis, marasmus, are sometimes met with in invalids, whom, notwithstanding, and contrary to all expectation, we see restored to health. Some years ago a young female died with all the symptoms of pulmonary consumption. On opening the body the lungs were found entirely sound; but the liver was in the state commonly termed enlarged liver—there was no other organic injury.

On the other hand, we often observe in patients attacked with true tubercular consumption, the absence of almost all the symptoms which usually attend the disease. Sometimes the cough is absolutely wanting, or is interrupted for months; the hectic fever is often scarcely perceivable, and sometimes ceases for very long intervals. Even the emaciation, from which the Greek physicians took the name of the disorder, is sometimes scarcely to be observed, and death may happen by the sole progress of the tubercular affection. Lastly, in many cases, colliquative diarrhœa is the only symptom, and therefore necessarily an equivocal one of the disease. M. Laennec states his conviction from a great number of facts, that, in some rare cases, an invalid may be cured after having had tubercles in the lungs, which have been softened and have formed an ulcerated cavity.

To render the preceding observations more clear and intelligible, the author has subjoined a few cases to illustrate the facts which he has detailed.

The first presents the account of two pulmonary ulcers cured or transformed into fistulæ by the *development* of a semi-cartilaginous membrane in a subject who had no more tubercles in the lungs. The second case shows the same disposition in a subject who had only a small number of crude isolated tubercles, and some miliary granulations, which, from their state not being very advanced, and from the vigour of the individual, would not, in all probability, have prevented him from still living to a considerable age. The third is the history of a woman still living and in good health, who, after having exhibited a disease which presented all the symptoms of phthisis pulmonalis, remains, after the cure, a pectiroloquist or one in whom that phenomenon may be discovered.

After considering the facts stated in the preceding cases, the form of pulmonary fistulæ, the smooth appearance and texture of the membrane which lines them, as well as the analogy of those phenomena which fistulæ in general afford, we should be naturally induced to think that the development of the semi-cartilaginous membrane is the last effort which nature is able to make for the cure, after the formation of an ulcerated cavity in the pulmonary texture; and that it is impossible for the parietes or sides of a cavity so lined to be reunited by a true cicatrix. The fourth case appears, however, to prove the contrary. It is that of a semi-cartilaginous fistula of the lungs in part cicatrized, in a subject who had other tubercles in different states of advancement, and another pulmonary fistula that was not cicatrized.

In commenting on this case, the author states, that the anatomical disposition which it indicated, seemed to be evidently the result of the approximation of the sides of an ulcerated cavity lined with a semi-cartilaginous membrane. But the union could not be completed, by reason of a small part of the tuberculous matter still remaining in the cavity. This case is, however, to be regarded as very rare, and is the only one which he ever met with; but he observes, it is not at all uncommon to find in different parts of the lungs, and especially the top of the superior lobe, a number of partitions or laminæ formed by condensed cellular texture, sometimes mixed with fibro-cartilaginous portions, whose whiteness forms a striking contrast with the texture of the lungs, presenting the appearance of a cicatrix imbedded in this texture.

The fifth case describes an old cellular cicatrix in the lungs of a man who died of a chronic pleurisy and acute peritonitis; and the seventh contains the particulars of an old fibro-cartilaginous cicatrix in the lungs of a man who died of peripneumony.

M. Laennec states, that many observations lead him to think that tubercles of the lungs are not in all cases, a necessary and inevitable cause of death, and that after their *softening* has formed an ulcerated cavity in the interior of the lungs, the cure may take place in two ways—either by the conversion of the ulcer into a fistula lined with a membrane entirely resembling the texture of the sound animal economy—or by a more or less perfect cicatrix, and of a cellular fibro-cartilaginous, or semi-cartilaginous nature.

In alluding to the frequency of such examples of fistulæ and pulmonary cicatrices, the author remarks, "I can assure any one who shall devote himself with assiduity to researches in pathological anatomy in our hospital, that six months will not elapse, without his meeting with very many such cases."

The seventh observation is on a case of pulmonary consumption suspended in its progress, and to all appearance cured; and the eighth is that of a young Englishman cured of tubercular phthisis. The ninth is a case somewhat similar.

M. Laennec has collected some judicious observations on the expectoration of tubercular matter, or vomicæ. These, he thinks are not the usual consequenees of peripneumonic inflammation, as many have supposed, but of the gradual development and *softening* of pulmonary tubercles.

His researches into pathological anatomy led him also to discover a state of disease not much noticed by others, viz. dilatation of the bronchiæ.

In the few cases of the disease which occurred to him, and which always arose from chronic catarrh, or whooping-cough, he distinctly observed the phenomenon of pectoriloquism. Dilatation causing an unnatural cavity, he considers as the cause.

The limits within which we are obliged to confine this article will not permit us to follow the author in his remarks on diseases of the heart, which are, however, extremely novel and ingenious. To many of our readers the long detail we have already given will appear tedious. As we had a new system to describe, we thought it but justice to use as much as possible the author's own words, Such a manner of proceeding detracts, perhaps, from the style, but adds to the practical utility of the article. It is but fair, however, to apprize our readers, that the novelty of the subject, and the variety of interesting matter which M. Laennec has introduced, make it difficult to convey a just idea of the author's experimental labour and acute observation.

Models of the instruments which M. Laennec uses have been brought to London, and we lately saw sets of them at Mr. Weiss's in the Strand. They are of so moderate a price, that it will be in the power of all to convince themselves of the reality of the phenomena observed by Laennec. This has already been done by several individuals, and we feel confident that very important results will, in all probability, be obtained from the experiments and observations now making.

An Essay on Mercury; wherein are presented Formulæ for some Preparations of this Metal, including Practical Remarks on the safest and most effectual Methods of administering them, for the Cure of Liver Complaints, Dropsies, Syphilis, and other formidable Diseases incident to the Human Frame: being the Result of long Experience and diligent Observation. By DAVID DAVIES, M. D. Member of the Royal Colleges of Physicians and Surgeons, London; and Senior Surgeon in St. Peter's Hospital, Bristol, 8vo. London, pp. 35, 1820.

> 'Nam ne agricolam quidem aut gubernatorem disputatione, sed usu fieri.—*Celus.*"

(Medico Chirurgical Review for March, 1821.)

ALTHOUGH the current of abuse has run strongly against Mercury in the writings of some modern reformers, and although there was some foundation for the reprehension of the abuses of this powerful medicine in the hands of ignorance and rashness; yet, among all sober-minded practitioners, the medicine holds its original rank, and is more depended on, in a great variety of diseases, than any other article of the pharmacopœia. Every attempt, therefore, which is honestly made and candidly imparted, for the purpose of pointing out the safest mode of administering this valuable remedy, and preserving the constitution from the effect of mismanagement, should be received with thanks by the profession, although no brilliant discovery be made, nor specious theory advanced.

Our author, who is a veteran in the art, and has had thirty or forty years' hospital as well as private practice to confirm or refute preconceived opinions, is convinced, from long observation, "that mercury, introduced cautiously into the system by inunction, more certainly removes disease than by the internal exhibition of it;—also that mercury eradicates diseases more certainly and more safely, when not allowed to pass off by the salivary glands, than when salivation is produced."

> "Much as been said and written by theorists on the cure of Syphilis without the aid of Mercury. I feel it therefore an imperious duty to caution the credulous and uninformed against a reliance on the anti-syphilitick power of any other medicine yet discovered. I do not, however, mean to say that the constitution, impaired by disease or by the improper administration of Mercury, may not occasionally derive benefit from the use of other remedies; among which might be named Iron, Sarsaparilla, Bark, Guaiacum, Nitric Acid, and other tonicks." P. viii.

Dr. Davies thinks it must be allowed that, for internal use, the less mercury (quicksilver) be changed by fire, and the less it contains of mineral or vegetable acids (provided it be sufficiently oxydated to produce the proper effects on the constitution,) the better it will be fitted for eradicating diseases. Under this impression, he offers the following formulæ for milder and safer preparations of mercury than those in common use.

CONFECTIO HYDRARGYRI.

"R. Hydrargyri purificati,
Mannæ optimæ,* partes æquales,
Tere Hydrargyrum cum Mannâ donec globuli visum fugerint ut fiat Confectio.

PULVIS HYDRARGYRI.

"R. Confectionis Hydrargyri,
Pulvis Glycyrrhizæ, partes æquales,
Mft. Pulvis signatur Pulvis Hydrargyri.

SOLUTIO HYDRARGYRI.

"R. Confectionis Hydrargyri, grana triginta duo,
Mucillaginis gummi acaciæ, fluidunciam,
Syrupi, fluidrachmas sex,
Aquæ Cinnamomi, fluidrachmas duas,
Signatur solutio Hydrargyri." 8.

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* Molasses or treacle may, I think, be advantageously substituted for the manna; as the former does not undergo decomposition.

We have often exhibited the pil. hydrargyri in *draughts*, when a repugnance was expressed against pills, and that without any decomposition of the mass. The above formulæ, therefore, draught and powder, may be useful in practice.

When mercury, in the above mild form, is introduced so as to produce a brackish taste in the mouth, swelling of the gums, with a gentle flow of viscid acrid saliva, then, our anthor thinks the boundary is reached, beyond which the medicine should not be administered, particularly to females and children.

We cannot follow our author into the theory of the *modus operandi* of mercury on the human frame. The subject is involved in great obscurity, and we can only merely mark the phenomena produced, without attempting to explain the *quo modo*, as yet.

Our author prefers the confectio hydrargyri to the officinal pilula hydrargyri of the shops, as agreeing better with the stomach and bowels, and being more uniform in its operation. In functional disorders of the digestive organs, this form is perhaps the best, taken in doses of four to eight grains at night, and a mild purgative the following morning, repeated once or twice a week, and prescribing rhubarb, columba, or carbonate of Iron on the intermediate days, with exercise on horseback in the open air.

Dr. Davies lays down a code of instructions for the proper administration of a mercurial course.

We can hardly agree with our author that even "in recent and slight cases of Syphilis," the patients may pursue their accustomed avocations, and keep to their usual diet, while taking mercury. We are convinced, that where mercury is at all necessary, low diet and confinement within doors are highly judicious, if not absolutely necessary restrictions. When patients labour under formidable stages of the disease, our author considers the following regulations to be necessary. 1st, The tepid bath—2d, An aperient combined with a few grains of calomel—3d, Flannel dress—4th. Regulated temperature to about 64°—5th. Diluting drink, and milk diet, with arrow-root or wheaten flour—6. Mercurial frictions carefully, but steadily, pursued till the cure is effected, without inducing violent ptyalism.

"In conclusion," says our author, "an anxiety to serve mankind, and a strong conviction in my mind, deduced from extensive practice, diligent observation, and an experience of forty years, impel me to add that this Confection, combined with Hyoscyamus, Myrrh, or Carbonate of Iron, has by me been found a most valuable remedy in Phthisis Pulmonalis and Scrophula; united with tonicks, purgatives, and diureticks, of excellent use in Dropsies; after local bleeding by Leeches, joined to appropriate remedies, very beneficial in dispersing indurated Tumors in the female breast, the prostate and other indurated glands. Lastly, combined with Tartarized Antimony, or with Antimonial Powder, it forms one of the best febrifuge remedies, suited to almost every case of Pyrexia. 33, 34.

Cases illustrative of the Efficacy of the Hydrocyanic or Prussic Acid in Affections of the Stomach, with a report upon its Powers in Pectoral and other Diseases in which it has been already recommended, and some Facts respecting the Necessity of varying the Doses of Medicines according to Circumstances, and the Use of Opium in Diabetes. By JOHN ELLIOTSON, M. D. &c. &c. One vol. 8vo.—1820.

(Medico-Chirurgical Rewiew for March, 1821.)

THE adaption of the various parts of the material world to our use is an admirable illustration of that benevolence which the Supreme Being exercises towards his sensitive and rational creatures. This truth, at all times conspicuous, becomes eminently so in an æra, when the penetrating search of the philosopher is continually developing a salutary tendency in those powers, which are wont to be regarded as the very bane of our nature. A variety of disorders, which seemed almost beyond the reach of medicine, have, within these few years, yielded to the skilful management of the most virulent poisons. And heartily do we congratulate every practitioner of the healing art, that to this class of remedies another is now added, which, we confidently believe, will be found inferior to none that have preceded it.

With the *prussic*, or (as it is now called) the *hydrocyanic**

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* The disposition which exists to obscure the science of medicine by the invention of high-sounding names, cannot be too severely reprehended. Even the chemists, whose predilection for hard words is notorious, saw enough of technicality in the title "prussic," to be satisfied. Why, then, should the sons of Æsculapius feel so desirous of a change? Is it (which is their only excuse) that they fancied they had found another term more descriptive of the thing signified? If so—grievously we apprehend have they erred in judgment. For, granting that every one understood the language from which the word is derived, and that no inconvenience would arise from its extraordinary length, (both of which suppositions are inadmissible) even then we deny that the adjective κυανεος, serves so well to denote the exact species of blue resulting from the trifling combination of acid, alkali, and iron, as that epithet, which, by a reference to the very substance itself, must immediately recal the precise idea of colour, if originally excited in the mind.

acid, every chemist must have been long familiar. Its pernicious effects on the animal body were first pointed out in a series of experiments performed by Dr. Madden, about the year 1730.* Soon afterwards, Dr. Browne Langrish instituted a number of trials, with the view of determining the medicinal qualities of this deleterious fluid. Such attempts however proving nugatory, the prussic acid underwent little farther scrutiny, until Doctors Majendie and Granville, about three years ago, again subjected it to the test of medical investigation. Their reports of its use in pectoral complaints were so favourable, as to induce the author of the little volume before us, to have recourse to it in his own practice; and, fortunately for mankind, here it was that the remedy happened, by mistake, to be adminstered to a person labouring under severe dyspepsia. The rapid amendment consequent upon its exhibition, excited a strong suspicion in the mind of Dr. Elliotson, that so striking a change had resulted from the employment of the acid. He resolved, therefore, on ascertaining the truth of this conjecture, by trying it on an extensive scale. An accumulation of *very valuable facts*, decisive of the accuracy of such an opinion, was the consequence. These form the bases of Dr. E's essay. They are divided into sets. The first set, comprising seventeen cases, is intended to illustrate the power of the acid over that affection of the stomach, which is indicated by *pain and tenderness in the epigastrium simply*. Ten of the persons thus afflicted were females. Generally, they had attained to the middle, or rather the advanced periods of life; and the duration of their complaints varied from a few weeks or months, to as many years. But, notwithstanding its almost inveteracy, it gave way to the use of the acid. In the majority of instances, indeed, the cure was effected in a few days or weeks; in none was it protracted so long as two months. We pass on then to the second set, in which we are presented with ten cases of pain and tenderness, accompanied by usual symptoms of *dyspepsia*, *as flatulence*, *vertigo*, *head-ache*, *loss of appetite*, *nausea*, *vomiting*, *debility*, *nervousness*, *cough and dyspnœa*. Here, also, the acid proved equally successful, although the complaint had existed months, and in some instances, even years. The control, in short, it manifested over these multifarious symptoms, would alone afford a sufficient demonstration of its extraordinary influence in stomach derangements. But, satisfactory as must be this conclusion to every unprejudiced mind, it will receive yet further confirmation from the five cases included in Dr. E's third division. These were examples, differing in no respect from those just mentioned, except in their greater degree of severity, and in being marked by an additional symptom, (viz.) *the pyrosis or watery secretion of the stomach.* No one can be ignorant how apt is this obstinate species of indigestion to baffle the endeavours of the most skilful. But, even here, our remedy did not fail: for in three of the five cases specified, it soon effected a perfect cure; and, so remarkable was the improvement in the remaining two, that, had the medicine been duly persisted in, complete success would, doubtless, have followed.

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* These experiments were indeed performed with *laurel water*; but, as no doubt is now entertained of the identity of its active ingredient with Prussic acid, they have been adverted to as fair illustrations of the virtues of the latter fluid.

Instances of dyspepsia, characterized by the frequent *recurrence of vomiting*, are by no means uncommon. To elucidate the efficacy of the acid over this modification of the disorder, eight cases are succinctly given, which, though of considerable standing, were all, in no long time, removed.

In the very brief analysis we here attempt of Dr. E's treatise, it is incumbent on us not to overlook *a circumstance*, which might be considered as affecting the validity of his conclusions. On a few occasions, he prescribed (he informs us) *a gentle laxative* in conjunction with the acid. Is it possible, therefore, the good ascribed by him to this latter remedy might, with greater justice, have been attributed to its concomitant. Anticipating however this objection, the Doctor has obviated it by the introduction of five other cases, which constitute his fourth division. In the first of these the patient progressively recovered, his bowels being, all along, in a constipated condition; in the second, scarcely any amendment took place for a considerale time, though they were kept relaxed by appropriate medicines; in the third, fourth, and fifth cases, complete restoration ensued notwithstanding the most obstinate costiveness. Hence, then, it is obvious, that the particular state of the intestinal canal possesses very little influence, either in promoting or retarding the salutary operation of our remedy on the stomach. At any rate, its power of restoring the healthy functions of this organ, does not appear to be diminshed by the *existence of fæcal accumulations.* With what shadow of probability, then, can the sanative process in question be ascribed to the *laxatives?* These reflections bring us to Dr. E's sixth and last division, which, although it include only four cases, is, we apprehend, one of no ordinary importance. It states the efficiency of the acid, in that formidable species of dyspepsy, which often *counterfeits diseases of the heart.* So exactly do the more prominent features of these opposite affections correspond, that we confess it has occured to us, to mistake the one disease for the other. The vehement and rapid pulsation in many instances of stomach ailments, accompanied, as it often is, by acute pains darting from the sternum and left breast, down the spine and left arm, together with the benumbed sensation of this member, and the hurry and dejection expressed in the countenance, are calculated to mislead even the most wary. But, in the prussic acid, we have an excellent method of discrimination; for, should they appear altogether beyond its control, they may fairly be presumed to be connected with some structural derangement of the circulating organ.

Such, then, is Dr. E's experience with regard to the virtues of this remedy in *functional disorders of the stomach.* Highly extolled as it has been in a variety of pectoral complaints, it did not, in the hands of our author, appear to deserve the encomiums it has received. He found it, indeed, serviceable in simple dry cough, and the spasmodic asthma; but in pneumonia and hooping cough, it seemed altogether useless. In phthisis it produced a slightly soothing effect, and that only occasionally. In hæmorrhages, in palpitations of the heart from organic derangements, and in all other disorders where it is desirable to diminish the force of the blood's motion, our author apprehends the prussic acid will prove of little avail. Several hysteric, epileptic, and maniacal patients, took it without the smallest benefit: but it presently wrought a cure in the only case of chorea, to which it was applied. In rheumatism it proved totally inert, but there is some ground for supposing it possessed of anthelmintic qualities. In the proportion of one or two drachms to a pint of water, it has appeared to allay the irritation of the prurigo pudendi and some other cutaneous affections.

From this description of its virtues, we proceed, briefly, to notice our author's *method of exhibiting* so potent a remedy. With persons of adult age, he generally began its administration in doses of a single minim, thrice repeated in the course of twenty-fours hours; and, provided neither nausea nor giddiness (which are its first sensible effects) nor other inconvenience ensued, he gradually augmented the quanity to two, three, and even to six minims. "Almost any adult (observes Dr. E) will bear one or two minims; few more than five; three are generally borne and required, and very frequently four. One woman took xvii minims three times a day without incovenience or benefit: xviii brought on vomiting and giddiness." To the youngest infant may be given a quarter of a minim, (i. e.) half a drop, one minim being nearly two drops. An over-dose will produce vomitting, pain and tightness at the stomach, with fainting; and if the quantity be immoderately large, convulsions and death. The only instance of its fatal effects on the human subject, with which we are acquainted, is recorded in the very interesting trial of Captain Donellan, for the murder of Sir Theodosius Boughton. The body of this unfortunate gentleman had passed too far into a state of putrefaction, to admit of any accurate anatomical deductions. But the effects of laurel water on the inferior orders of animals, as detailed by several physicians produced at that trial, are worthy of an attentive perusal. In some of their experiments, death instantly took place; and, in all, so speedily, as to render the supposition of its being the consequence of previous inflammation in the stomach wholly inadmissible; whilst, on the other hand, the frightful convulsions which this poison, in adequate doses, never failed to excite, clearly prove that its operation is, primarily and principally, on the nervous system. This supposition will go a good way towards explaining the modus operandi of the prussic acid, in severe dyspeptic cases. No sooner is it swallowed, than the pain accompanying such states often ceases. From this moment the vitiated secretions shew evident signs of amendment, and go on progressively improving, until they are, at length, subdued. Now, as the formation of healthy gastric juices evidently depends on *a regular transmission of nervous influence into the secerning organ*, it may fairly be presumed, that any *deviation* from such *supply* would cause this depravation. If, then, our remedy be supposed to possess the power of correcting all irregularities in the distribution of this subtle fluid upon the stomachic nerves; or in other words, of restoring the balance of excitability at this part, we might conclude, *a priori*, that its operation would be speedy and its effects just what observation teaches us. Quitting however speculation, we are anxious to fix the minds of our readers upon considerations of much greater importance—actual facts.

Unlike many other powerful agents in medicine, the prussic acid may be taken for an indefinite period, without incurring the hazard of an accumulated operation. But, it must be at the same time admitted, that there are constitutions with which it does not seem to agree. The inconvenience, however, in such cases, is only temporary, and by no means of a serious nature. Upon the bowels, it has a slightly constipating effect, and, occasionally, it augments the discharge of urine. It will be borne in the middle and after parts of the day better than at first rising; and, should any feeling of coldness exist in the stomach, it may be advantageously combined with aromatic and bitter infusions.

As the process usually adopted in the preparation of our remedy involves much chemical skill, it will sometimes fall to the lot of practitioners to use a spurious and ineffectual sort. This precaution is the more necessary, as such accident must materially tend to the discredit of a medicine, which, when genuine, will be found to be of great value. We deem it therefore, incumbent on us, to point out to our readers those indications which, in our opinion, are decisve of its purity.* The fluid should be colourless and perfectly transparent, powerfully emitting the odour, and leaving on the tongue the flavour of bitter almonds. Having been at considerable pains to determine its specific gravity, we can safely assert that at the temperature of 60°, it is to that of distilled water at the same temperature, as .9931 is to 1. Should the liquor appear turbid or deposit any sediment, its genuineness may be suspected. This change diminishes its activity and is, in all probability, produced by the absorption of oxygen, which converts it from a ternary compound (consisting of hydrogen, carbon, and azote) to a quaternary, which is composed of these elements with the oxygen superadded. We have only further to remark on this topic, that, as the active principle of which we here speak is a gazeous vapour, held in solution by water, easily decomposed by light and driven off by heat, it must be kept in a dark and cool situation. The method best adapted for general purposes is an earthen-ware vessel, filled with water, and covered over.

Thus much with regard to the prussic acid. We now proceed to notice the *two remaining sections* of Dr. E's volume. The former of these consists of a few cases illustra-

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[*] At the recommendation of Dr. E. we obtained the medicine at Mr. Garden's the Operative Chemist, 372, Oxford Street.

tive of that power, with which the body, in certain morbid conditions, *resists the ordinary influence of remedies.* And, although we are fully sensible of the value of such instances in a pathological point of view, yet we cannot but regard the extreme minuteness with which they are detailed, as quite unnecessary for all practical uses.

The first was a case of spasmodic dyspnœa, in which the paroxysms, though recurring almost daily, were regularly subdued, and at length permanently removed by prodigious doses of opium. Only sixty drops of the tincture were at first adminstered, but this proportion, in four days, was increased to ʒvi, and in eight, to ℥j, with no other effect than that of giving the patient some comfortable sleep.

The second case, was an instance of *insanity*, accompanied by great heat and throbbing of the head, and obvious disorder of the chylopoietic viscera. It was treated with *calomel*, at first, *in eight grain doses*, but afterwards *in doses of ʒiss*. In six months *nine ounces* of this potent mineral were actually administered, and that too without originating any other inconvenience, than ordinarily ensues from the regular and moderate use of it; and, although it did not ultimately eradicate the disorder, the proofs of its controlling power were always manifest;

Dr. E. next presents us with five instances of the admissibility of enormous doses of pulvis antimonialis in hemiplegic, convulsive, and other nervous disorders. By some of these individuals, *sixty*, *seventy*, *and even eighty grains*, were taken thrice in the course of twenty-four hours, for several successive days, *unattended by any unpleasant symptom*, *save a slight nausea*, *or*, *occasionally*, *a gentle disposition to vomit.* By this extraordinary fact, Dr. E. thinks the long litigated point, as to the identity of the pulv. antimon. with James's powder, might be decided. For, should a similar administration of the latter substance act with violence in similar cases, this circumstance, he apprehends, would at once prove the diversity of their nature.*

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* We are probably much in the dark yet respecting the *extent* to which medicine may be carried with perfect safety. In Italy, where pathology and therapeutics are now cultivated with unequalled zeal, the sulphas ferri is given, with great success, in dropsical affections connected with, or dependent on, inflammatory affections of the serous membranes, and that in doses which we would scarcely credit. They begin with five grains twice or thrice a day, and increase it to one or two drachms for a dose. Instead of augmenting febrile symptoms, it lowers the pulse, increases the urine, and all the secretions and excretions, thus removing the dropsy, and improving the constitution, at the same time. *Ed.*

The only remaining section of Dr. E's work relates to a very interesting subject, (viz.) *the efficacy of opium in the diabetes mellitus.* This important fact, though obscurely hinted at by some preceding writers, was first distinctly noticed by that eminent practitioner, Dr. Darwin. To his testimony of the advantage of such a method, are subsequently added those of Drs. Ferriar and Warren, and Mr. Money, a surgeon at Northampton, now of London. But, to our author it is that we are indebted for any thing like a statistical and satisfactory account of its effects in this disorder. From his statements it is manifest, that the free use of opiates is not only capable of *restraining the enormous secretion* of fluid which takes place in diabetes, but, also, of *divesting it of that saccharine principle*, with which it abounds; and of ultimately restoring it to a condition, in every respect, natural. To effect this desirable purpose, however, it was necessary to administer the medicine in prodigious doses. Sometimes ℈i, at others ʒss, and in one of the detailed cases, not less than ℈ii of solid opinm were actually given three times a day, for upwards of a fortnight. At the recital of these facts some of our readers may perchance be a little startled, but to ourselves, who have repeatedly had occasion to witness the extreme apathy of diabetic patients, both mental and bodily, they are not at all surprising.

It is the remark of certain practical writers, that diabetes mellitus is *always* preceded by a state of urine differing from the healthy, only in respect of quantity. It happening to our author, therefore, to meet with such cases of *increased secretion*, he regarded them as the preludes of that disorder; and accordingly treated them with opiate medicines, to which they readily yielded. It appeared also from the analysis of that able chemist, Dr. Prout, that the urine, in these cases. contained by far too great a proportion of urea. Such considerations, corroborated as they are by the near resemblance of this substance to the saccharine principle, led Dr. E. to the supposition, that the sweetness of diabetic urine is simply the effect of a depravation of its chief saline constituent, the urea. The precise nature of the change, it would be difficult perhaps to determine; but, as the addition of azotic gas to the elements of which this singular substance is composed, is known to give sugar, the Doctor throws out this merely as a conjecture, whose reasonableness, indeed, appears to us yet further confirmed by the reflection, that in the process of secretion there is ground to believe, that the circulating mass is resolved, by the various organs of the body, into its elementary parts; and by them again so combined, as to form the different secreted fluids.

Such, then, is the brief outline of Dr. E's publication, which, though ushered into the world in an humble form, and with a diffidence which ever accompanies true merit, will be found to be a valuable addition to our medical literature. Candour, talent for observation, and accuracy of discrimination, are conspicuous in the work throughout; aud what he has advanced on the subject of prussic acid, we have ourselves, in the main, *confirmed and verified* by a pretty extensive scale of experiments.* The first proof we had of its efficacy, (which was indeed the first trial we gave it) was in a case of severe dyspepsy, which had for three months resisted the combined influence of alterative and bitter tonics, and was accompanied by a most violent and continual palpitation of the heart. The instantaneous relief it afforded, at once astonished and delighted us. The pain in the epigastrium ceased, and the troublesome symptoms rapidly declined until they had all (including the alarming action of the heart) in the space of a week, entirely disappeared. And, to pass over many other instances equally convincing, we would for a moment, direet our reader's attention to the case of a poor man, who had for some years past, at distant intervals, been subject to *convulsive attacks*. He had had three fits the day he visited us, and was actually seized again in our presence. It remained upon him about ten minutes, during which time the arms were agitated upwards and downwards incessantly, the head drawn towards one side, and the muscles of the face violently distorted. He informed us, a painful distension of the epigastrium always warned him of their approach; and that he, almost constantly, experienced a degree of soreness and fluttering at that part. Thus directed to the stomach as the "fons et origo" of his affliction, we prescribed for him the acid three times a day in minim doses. Immediately after the first dose (which was administered without delay) the epigasrium was relieved, and, although a month has now elapsed since we first saw him, the fits have never recurred. For ten days past he has been occupied in his usual employment, and with the exception of a slight uneasiness, once or twice, transiently felt at the stomach, he has remained entirely free from complaint.

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* The Editor entrusted the review of this work to a physician in the country, whose public practice at a charitable institution, and private experience qualified him to report practically and usefully on the publication.

These considerations, together with our own experience of ts inutility, in inflammatory and structural affections, will not suffer us to withhold from Dr. E. the merit of having ascertained and defined, by a chain of judicious experiments, the more important medicinal qualities of the prussic acid. The forcible manner in which he has demonstrated its operation to be, specifically, on the stomach, has, indeed, suggested to us an application of the remedy, which our author does not seem to have contemplated. We allude to its use in those painful disorders, gout, gravel, and diabetes, which the best modern writers agree in ascribing to derangements in the digestive functions. In a severe calculous case which recently came under our care, it was given with the decided effect of allaying both vomiting and pain; and we have sanguine hopes its efficacy may also extend to those other "opprobria medicinæ," at which we have just hinted. At any rate we are resolved on omitting no fair opportunity of determining this point, and we trust our brethren in the profession will deem the subject of sufficient interest to institute similar inquiries. From such an investigation much important knowledge, we are pursuaded, would result. Perhaps it would disclose to us new paths of research. But, whilst we augur thus favourably, let it not be imagined that we belong to that class of visionaries who, on the discovery of any valuable medicine, never rest until they have ruined its reputation by proclaiming it a panacea. We are of opinion, that the prussic acid will be found possessed of little efficacy except where the stomach is concerned. Many instances of dyspepsia, which spring from depraved hepatic or other chylopoietic, secretions, we are aware, will never yield to it. But, whenever the disorder consists in, originates from, or is connected with, derangements in the *gastric functions*, (excepting however those cases in which the structure also of the organ has become morbid) then will the remedy evince its amazing powers. How ample, therefore, the sphere of its operation!

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(From the Medico-Chirurgical Review for December, 1820.)

The desire of *communicating* knowledge appears to be as strongly and instinctively implanted in the human mind, from the earliest infancy, as that of *acquiring* the same. We see the child fly to its parents or companions to impart the newly-acquired idea or information; and in every stage of existence, from the cradle to the grave, we find that nothing but avarice, fear, or some base passion, can prevent man from freely communicating to others, what may have cost himself years of laborious study or research to ascertain. This is certainly no unfavourable trait in the human character; and in no class or profession is it more conspicuous than in the practitioners of medicine, where, at the same time, the most powerful temptations and inducements exist to deface it. The formation of societies, and the publication of transactions, through the medium of which, each individual may contribute that which has most attracted his attention or occupied his thoughts, are of incalculable service to the general progress of the healing art. They prevent the unnecessary multiplication of books, by giving an easy vent to facts, observations, or essays, which might otherwise expand into separate volumes, without any increase of solid materials; while at the same time, they rescue from oblivion, or the narrow circle of individual possession, many valuable facts and suggestions which, but for these accessible vehicles of record, would inevitably perish. Volumes of this kind must necessarily be very unequal in themselves, since chance and a thousand fortuitous circumstances operate on the nature, as well as on the current of the communications that compose them. Nothing then, in our opinion, can be more unfair than to estimate the general character of a work of this description by the insulated articles of a single volume—and still less justifiable is it to measure a contributor's genius, talent, or information by the importance or magnitude of a detached paper that is but little calculated to afford any criterion, pro or con, of a man's abilitiy, judgment, or experience. Such, however, is by no means an unusual practice in this athenian age of colloquial criticism, where we exercise the noble liberty of speech and press with unbounded latitude.

A volume issuing from the Royal College of Physicians, the highest constituted body in the profession, endowed with chartered powers, high privileges, and distinguished rank, offers a prominent object for the eulogies of friends, and the aspersions of enemies, besides affording a prolific topic of criticism for the gossips and small wits of the profession. It is not, however, for the zealous and unbiassed cultivator of medical science, or the humble inquirer after truth, where-ever that may be found, to mingle party spirit with his pursuits, or suffer the distorting medium of prejudice to come between him and the objects of his research.* On this account, we shall adhere, with more than usual rigour, to the analytical line of our policy, conscious that, under existing circumstances, our criticisms would, by one party, be considered *presumption*—our commendations, by the other, *adulation*. In laying an impartial portrait of each article before the reader, however, we shall occasionally hazard a practical remark or observation, which we trust will be received in the same spirit of candour with which it is delivered. "Interea vero, quicquid falsi vel incerti eidem insit, si artem medicam promovere cupimus, firmoque et perenni fundamento stabilire, refellere et corrigire decet, probe memores, sapientiam esse primam, stultitia caruisse.' †

The volume before us contains sixteen articles, and we shall take them in the order in which they stand.

History of a Case of Strangulated Hernia, successfully treated by the application of ice, after the attempt at reduction by the taxis had failed. By G. D. YEATS, M. D. F. R. S. Fellow of the Royal College of Physicians, &c.

THE great danger to be apprehended from the incarceration of a portion of intestine or other internal part, is inflammation and its consequences. The *obstruction* to the fæcal passage is quite a subordinate consideration, excepting as it may increase the inflammation. Cold has a great effect in restraining this inflammatory tendency, and not only by constringing the vessels, but depressing the nervous excitement of the parts. It is therefore very generally employed in aid of the taxis by our best surgeons. The case related by Dr. Yeats was a young man, ætat. 18, who was seized with sickness, vomiting, and great pain in the right groin and back, on the morning of the 16th March, 1807. Dr. Y. saw him in two hours after, and found a considerable swelling in the groin, protruding into the scrotum, "produced by a strangulated hernia of the congenital kind." It was extremely painful to the touch, and very tense, with great soreness over the abdomen. The countenance was pale and sunk, the pulse 100, full and hard, with thirst and restlessness. Twelve ounces of blood were taken from the arm; twelve leeches were applied to the tumour, and the bites encouraged to bleed by fomentations. By these means he obtained great relief. Five grains of calomel and one of opium were exhibited, and one grain of the former directed to be given every hour afterwards. When the flow of blood by the leeches had ceased, pounded ice was applied to the tumour, and in the afternoon a clyster was administered, which brought away some fæces. "The pain was by this time mitigated, and the inflammation and tumour were certainly less, so that he could lie horizontally with comfort." Mr. Macklin, state surgeon to the Lord Lieutenant of Ireland, was now called in, and attempted the reduction of the hernia, but without success. A grain of opium was directed at bed time, and the calomel and ice to be continued as before. On the following morning the pulse was calmer, and the countenance improved. The tumour also was diminished in bulk, and the abdominal tension almost entirely gone. The same remedies were continued, and a purgative clyster ordered. "In the evening the clyster had produced a feculent evacuation, and by bed-time the hernia had returned into the abdomen with the testicle also." The testicle descended the following day; and as soon as the hernia was decarcerated, two or three spontaneous feculent evacuations took place.

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* In truth, we conceive that the character of the college, as a body, is no more concerned in the character of a volume of the transactions published under its auspices, than our own character is involved in that of the works which we happen to analyse for our journal. If a council of the college superintend the publication, and if that council admit bad papers and reject good ones, then the judgment or impartiality of the council may be impugned. In no other way, we imagine, can the college be concerned in the work.

† Gregory's Conspectus.

Dr. Yeats makes several practical remarks on the utility, abuse, and action of cold, in strangulated hernia, which deserve the surgeon's attention. He properly disapproves of purgatives given by the mouth, before the obstruction is beginning to yield, and even then they are seldom necessary. "The administration, however, of laxative clysters is obviously required." They should not, Dr. Yeats thinks, be made with acrid ingredients. He directs the submuriate of mercury in small doses of a grain, frequently repeated, "with a view to its relaxant effect, which it powerfully exerts when it affects the constitution." We shall conclude with the following extract from this intelligent physician:

"I may here mention, although I cannot now urge the reasons in detail, that I have almost uniformly found the combined exhibition of submuriate of mercury and opium, one of the best means of arresting the progress of inflammation, especially under circumstances when that morbid condition continues after repeated general bleeding, and when it seems to bid defiance to all you can do, by lessening the general momentum of the blood. In ileus, acute rheumatism, pleurisy, and all purely inflammatory diseases, this combination, not omitting, of course, depletion, has pretty faithfully served me." P. 15.

Some Observations upon Paraplegia in Adults. By MATTHEW BAILLIE, M. D. F. R. S. L. and E. Fellow of the Royal College of Physicians, &c. &c.

THERE is not a more difficult point in pathology and practice, than that of ascertaining the actual seat or cause of disease. An irritation in one part will cause pain or some morbid phenomenon in a distant part, and these deceptious manifestations are not obedient to any hitherto ascertained law of the animal economy. An irritating body or secretion in the digestive organs will, in ten different individuals, exhibit ten different effects, in kind as well as situation. We have, at present, no law by which we can accurately trace the chain of causation; and therefore our great business is, to collect facts and observations, as a basis for future medical legislation.

The experience and knowledge of a man, in our profession, are generally in an inverse ratio to the boldness of his conclusions, the absoluteness of his dogmata, and the positiveness of his assumptions. The personal conduct and public writings of Dr. Baillie afford an excellent commentary and illustration of this text. Cautious in his practice, guarded in his prognosis, candid in his opinions, and, what is more estimable than all—charitable towards the failings and discrepancies of his brethren, this veteran physician offers an example for the humble to admire, and the proud to imitate. We know that in stating these sentiments, we but re-echo the general voice of the profession; yet we deem it our duty to do so, (not from any private feeling, for we owe Dr. Baillie nothing but the homage of our public esteem) because we believe that moral worth, in the higher ranks of the profession, conduces not less to the vital interests of that profession than splendid attainments. The cry for reform has been long and loud in medical society; but we apprehend that the great subject for reformation is our own conduct towards each other. This work must begin at home. When we determine to do strictly unto our brethren as we would be done to by them, harmony and unanimity will prevail, and the science will rise in public estimation. This is the line of conduct which a Baillie *has* pursued; and it is that which every member of the profession *may* pursue.

Our experienced author conceives that paraplegia has "increased considerably in this country within the last fifteen or twenty years," for which he is unable to assign a satisfactory reason. The paraplegia of adults, Dr. Baillie observes, has been considered by most medical men as being produced by some disease, "either in the bones or ligaments of the spine, or in the cavity of the spine, most commonly at the loins, independently of any disease in the brain."

> "In adults, however, where there has been no accident affecting the spine by outward violence, paraplegia, I believe, depends most commonly, in a great measure, upon a disease affecting the brain itself." P. 17.

Dr. Baillie is joined in this opinion by Sir Henry Halford, Sir James Earle, Mr. Copeland, and some others of his friends. We conceive that our continental brethren have taken a pretty similar view of the pathology of this distressing disease. They consider it to result from something which interrupts the nervous energy from flowing along the spinal cord to the nerves of the lower extremities.

> "Il en resulte que les mêmes causes qui produisent la paralysie en général, sont susceptibles de donner lieu à la hémiplégie elle-même."*

We need not state that the general causes of hemiplegia are pressure on the brain. In the paraplegia of adults Dr. Baillie observes that we can rarely detect any external mark of disease in the lumbar region of the spine, although thickening of the theca vertebralis, serous effusions, or other organic changes may, and no doubt do, occasionally, take place. Still he thinks that these causes less frequently produce the disease than has been imagined, and that pressure on the brain is the more usual agent.

> "In such cases the diseased condition of the brain may immediately affect a portion of the spinal marrow, and its nerves, in the same manner as it affects the nerves of a lower limb in hemiplegia; or if there be effusion of serum between the membranes of the brain, which is a very common occurrence, a portion of the serum may fall into the theca vertebralis, and press upon the lower part of the spinal marrow.† 19.

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* Dict. de Sciences Med. Vol. 39, p. 277.

† The French include in the etiology of paraplegia, irritation of the spinal marrow, whether idiopathic or resulting from gouty or rheumatic metastasis; also its sympathetic affections produced by derangement in the stomach and bowels—a very common cause say they.

Paraplegia occurs most commonly at and after the middle period of life, and oftener in men then in females. Some affection of the head usually precedes and accompanies the disease, as pain, giddiness, drowsiness, impaired vision, defective memory. Occasionally there is numbness, or other indication of approaching paralysis in the upper extremities without any appearance of disease in the cervical part of the spine. The paraplegia creeps on with, at first, a stiffness or awkwardness in the motions of the limbs, increasing to a want of power to preserve the due balance of the body without the assistance of a stick. As the disease advances the stream of urine becomes more and more feeble, and at length passes away involuntarily. The bowels are generally costive, and at length, from a want of power in the sphincter muscles of the anus, the fæces are evacuated unrestrained by the will. Patients in this state sometimes live for years; but more commonly the symptoms increase gradually, and the constitution becomes exhausted. In a few instances recovery takes place.

In one of the most strongly marked cases which Dr. B. had ever seen, the bones of the scull, more especially at the sutures, were more vascular than usual; the dura mater was natural; the vessels of the pia mater were very much loaded with blood, and there were effusions of serum between the different membranes of the brain on both sides of it. The tunica arachnoides was opaque and much thickened; the substance of the cerebrum was considerably softer than natural. About four ounces of water were found in the lateral ventricles of the brain, and a considerable quantity of water was discharged from within the theca of the spinal marrow.

Dr. Baillie thinks it not improbable that, in those cases of paraplegia in which the brain is diseased, the morbid affection extends to both hemispheres.

In respect to treatment, our author found those means most successful which were directed to relieve the head, viz. cupping the nape of the neck, leeches to the temples, blisters to the nape of the neck, setons, &c.

"The internal remedies which I have used with most advantage are calomel, or the pilula hydrargyri, combined with squills, together with purgative medicines. A grain of calomel, or five grains of the pilula hydrargyri with one grain of dried squills, have been directed to be taken every night for many weeks. The purgative medicines have consisted chiefly of neutral salts, and sometimes of pills composed of the extractum colocynthidis compositum, with an addition of jalap." 25

In a few instances advantage was derived from friction of the lower extremities with the hand, for an hour twice a day.

In one case electric sparks drawn from the lower limbs produced much benefit. In those cases where the paraplegia evidently depends on disease of the bones or ligaments of the spine, the foregoing treatment, of course, does not apply. Where lead is the cause, the Bath waters have been found peculiarly serviceable.

M. Chamberet, who has written an article on paraplegia, in the Dictionnaire des Sciences Médicales, very properly observes that the farrago of heating and stimulating remedies used formerly in paralysis, must have done much mischief. He recommends cupping and leeching the spine, while counter irritation is kept up at a distance, to draw the irritation from the brain and spinal marrow. In the mean time, as many cases are purely symptomatic of gastric and other derangements of the abdominal viscera, he judiciously directs the attention of the physician to the remote source of the malady, rather than to its apparent seat. These observations coincide with, and corroborate the opinions of our own illustrious pathologist, as delineated in this analysis of his paper.

Observations Médicales. Par Jos. Rom. Louis Kerkhoffs M. D. &c. &c.

The first of these observations, is a memoir and some cases, of plica polonica, which, however, we shall not stop to analyse, as it is a subject but little interesting to the British practitioner, and our principle is invariably to select what is *most* useful. We may remark, *en passant*, that our author comes to the conclusion that the disease in question is entirely owing to want of cleanliness, together wich the habit of wearing the hair long and constantly covered, so common among the lower classes of the Polonese. This opinion is contrary to that of the best Polish Physicians. We shall therefore leave the doctors to settle the dispute. The second section is on the subject of willow bark in "phthisie muqueuse." This we have touched on in our electic article in the present number of the journal. The third section is written in Latin, and contains the case of a soldier poisoned by the acetate of lead. The quantity taken, and the time of taking the poison, are not stated. The symptoms were constipation, anorexy, great lassitude and debility, distention of the abdomen, followed by retraction of the same, sense of soffocation, nausea, convulsions, cold sweats, trismus. The stomach was found inflamed, and some portions of the mucous membrane macerated, especially about the pylorus. Spots of inflammation were also observed in the œsophagus, duodenum, transverse arch of the colon, pancreas, mesentery, liver, &c. About six ounces of a dark-coloured liquor were found in the stomach, which, on chemical examination, was found to contain acetate of lead.

In the 4th section is an opinion respecting the origin and prevention of hospital gangrene. Our author is convinced that it owes its existence to the same morbific miasm which occasions putrid fevers, and that it is to be prevented by scrupulous attention to cleanliness in the beds, &c. of the wounded, and free ventilation

The 5th section or observation is on scabies, which Dr. K. has long been in the habit of curing by a solution of muriate of soda two ounces, in a quart of infusion of arnica montana, which is prepared by pouring two pints of boiling water on four ounces of the flowers or roots of arnica. With this liquid the affected parts are to be washed three or four times a day.

In the 6th section Dr. K. strongly recommends fomentations of hot water containing carbonate of potash, in cases of whitlow, especially when suppuration has evidently commenced, and the proper incision has been made. We do not consider the addition of the alkali as of any great importance.

The latinity of these articles has been objected to by some of our classical friends. To us the language has clearly conveyed the author's meaning, and beyond this we do not look, in the simple narration of facts or observations.

Description of an unusual appearance in the Viscera of an Infant, &c. By HENRY JAMES CHOLMELEY, M. D. Fellow of the Royal College of Physicians, &c.

THE infant was observed to be very sallow on the day after birth, which appearance daily increased till it became completely icteric. The meconium was scanty, but of the usual appearance. An emetic brought away some dark green bile, and the yellowness of the eyes and the skin diminished.

The stools continued white and pasty, the urine of a deep hue. At the end of five weeks, during which the jaundice continued, an attack of convulsions terminated the child's existence. The infant took the breast freely while it lived; but vomited up what it took. The bowels were seldom moved without medicine. On dissection, the liver was found of a natural size, but of a green hue throughout its substance. The gall bladder was totally wanting, there being only a narrow impervious cord in its place, with a small knot at each extremity. The pancreas was enlarged and indurated, so as to obstruct the egress of bile from the liver to the duodenum by the ductus communis choledochus. This circumstance prevents our gathering any thing from the case relative to the use of the cystic bile; since all the Phenomena recorded might readily be attributable to the interrupted course of the bile generally into the intestines. The case clearly shews, however, the importance of the biliary secretion, and the effects of its obstruction.

Remarks upon the Effects of a Warm Climate in Pulmonary Consumption, and some other Diseases. By H. W. CARTER, M. B.

Dr. Carter's observations on this subject, are very congenial with those lately promulgated by Dr. Clark of Rome, whose work we reviewed in the 8th number of our quarterly series.

Dr. Carter thinks, and with reason, that persons labouring under pulmonary affections are too indiscriminately advised to a warm climate. They are often sent out when their complaints are hopeless, to pine and die in a foreign land! On the other hand, " the very first appearance of affection of the lungs, should be attended to; and, provided there be any predisposition to consumption in the patient, and his circumstances be such as to render a journey to the South practicable, a mild climate should be recommended without delay;" Our author properly observes that it is much better that the patient should be frightened, than lulled into a false security. He has seen decided advantages from a warm climate in incipient phthisis. But invalids, he remarks, are not to imagine that a single winter's residence abroad will be sufficient to restore to health a person whose lungs are affected. It will often be found necessary to continue several years out of England—in some instances, the whole of the person's life. He has known some fatal consequences from returning prematurely to England. From all Dr. Carter has been able to learn, "it is only in cases of incipient phthisis that a warm climate is of any advantage."

> "When the disease has assumed a marked character, when there is much cough, with purulent expectoration, flushing, and a frequent pulse, and emaciation, I believe that climate never effects a cure, and very seldom prolongs the existence of the sufferer." P. 64.

In such cases, indeed, we ourselves and many others have seen the disease hurried on, as the warm latitudes were approached. Mr. Risso, a gentleman of Nice, is now employed on a work to prove that residence on the *sea-coast* is injurious to consumptive patients. We suspect that the disadvantages are owing to something in the topography of the place: rather than to its vicinity to the sea. No example of recovery from confirmed phthisis has occurred at Nice, by our author's account——nor in many other places, we fear! Yet he says the climate of Nice is as good as that of Lisbon or Naples, while it is superior to that of Marseilles or Montpellier, where patients suffer much from the north and northeast winds. And, as it is pretty evident that climate has no power in checking phthisis, after it has passed the first stage, it is to be remembered that the distress, occasioned by travelling under such circumstances, must generally aggravate the symptoms. "More mischief is done by the journey than the finest climate can repair." Besides, if the patient do struggle through the winter in Italy or the South of France, he is obliged to move again in the summer, to avoid the intemperate heat; and thus travelling soon becomes irksome to an invalid, especially where the accommodations are so bad as in the countries in question.

In the *early stage* of phthisis Dr. Carter thinks there can be no doubt of the service derived from a sea voyage, the sickness thereby induced being probably more efficacious than that from medicine. In confirmed phthisis, however, whether the sea air be injurious or not, the sickness exhausts the patient without alleviating his complaint, while the tædium and discomfort of a ship render a voyage almost as bad as a journey by land. In short, our author thinks, and so think we, that "persons in confirmed phthisis should never quit their own country."

A warm climate being allowed to be useful in incipient phthisis, the next point to ascertain is—the most eligible residence. Madeira, our author believes to be the finest climate in the world. We much doubt this. But there are many objections, particularly the mountainous nature of the country, rendering it almost impossible for the invalid to take proper exercise. In Spain, Barcelona, and Malaga, Dr. C. thinks are good winter residences, if the patient can make up his mind to see few of his countrymen, and meet with little to amuse or interest him. At Lisbon the weather is often so cold and rainy, in winter, that it cannot be recommended. Marseilles Dr. C. considers an improper place. The sun is powerful, while the north wind, when it blows, is piercing cold. What is worse than all, the changes of temperature are sudden and great. The same observations apply to Montpellier. The sea wind is said to be so loaded with moisture, that when it prevails "the furniture and beds become excessively damp." Hyeres, Dr. C. thinks, is probably the best residence in France, as to climate; but there are many objections to it. It is poor —affords but very indifferent accommodations—no society—nor medical assistance that can be relied on. Florence "is decidedly a bad winter residence." "The climate of Rome is not to be compared with that of Naples, which is, indeed, delightful." The only objection is the Scirocco, or southeast wind, which in summer is very oppressive, but in winter bearable.

> "The scenery around Naples never ceases to be interesting: and the general fineness of the weather, and facility of conveyance from one place to another, enable an invalid to procure much instruction and amusement without risk or fatigue." P. 78.*

Upon the whole, our author thinks Naples an elegible winter residence; yet if the fascination of scenery and the interest of the environs of Naples be put out of the question, our author would give the preference to Nice above every other part of Italy with which he is acquainted. The walks and rides about the town are as varied and pleasant as can be desired, and the botanist and geologist may gratify their curiosity.

But wherever the invalid may fix his residence, there are certain precautions, which he should always bear in mind. He must not trust too much to the mildness of the weather, and throw off too hastily those clothes to which he has been accustomed. He ought not to be out late in the evenings. The invalid should not expose himself to the sun, and then stand in the shade; between which, in all warm climates, a great thermometrical difference prevails. He should not expose himself to the prevailing winds. In his diet he should be cautious; for although the wines are very pleasant, and not so heady as our own, they are obviously improper where the lungs are weak. The high seasoned dishes, so common abroad, are to be avoided, as well as the sauces of which the French and Italians are so fond. The fruits of the South, however, are wholesome and refreshing, especially if taken before dinner.

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* It may not be improper to say that, in Dr. Miln, resident physician at Naples, (a gentleman to whose professional character we can speak from personal knowledge) the English invalid will find a countryman, in whom he may place the fullest professional confidence.

Neither Naples, Nice, nor any of the places enumerated by our author, are considered by him as proper summer residences for the pulmonary invalid; "some of them being extremely unhealthy, and all of them too hot at that season."

> "In the early part of the summer, perhaps, the banks of the Lago Maggiore, or of the lake of Como, or some spots in Tuscany, or Grasse in France, might be selected; but in July, and the two following months, the heat is too great even at these places; and it will be advisable to move to Geneva, or somewhere in the neighbourhood of that town. There are several spots near Geneva which are reckoned very healthy, and where the climate is good in summer, Mornex is one of these. About the commencement of October the patient may return to Italy or the south of France." 36.

If the winter residence have been Lisbon, the patient should move, as soon as the hot weather sets in—say to Cintra, for example, where the country is eminently beautiful, and the air always cooling and refreshing.

Our author makes a few brief remarks, in conclusion, on the influence of a warm climate on some other diseases besides pulmonary complaints. Over gout he has seen climate exert a powerful influence. One striking instance of which he relates. A patient inherited a predisposition to, and was early and universally affected by, the disease. He was nearly deprived of the power of walking, and his stomach had become seriously deranged. During this gentleman's journey from England he experienced a severe attack of atonic gout, which confined him for several weeks. He arrived at Nice late in the autumn, and greatly debilitated, with much derangement of stomach and bowels. At Nice he continued a considerable time, and recovered not only the power of walking, but the healthy tone of his digestive organs. Chronic rheumatism and asthma are slightly noticed as being benefited by a warm and equable climate. Dr. C. informs us that it is now fashionable to send patients abroad for deafness; but this disease has not appeared to be in the least benefited thereby.*

For further information on this subject we refer our readers to Dr. Clark's very interesting little work on climate, which should be recommended to every patient before he parts from England, as containing many valuable remarks and much important information, touching his convenience as well as health. The extent to which we have carried the analysis of this article, will shew our estimation of its utility, as well as our respect for its worthy author.

On the Medicinal Properties of the Solanum Tuberosum, or Potatoe Plant. By JOHN LATHAM, M. D. F. R. S. the President.

WE have many medicines, but few remedies. Of the former, many are expensive exotics, as opium for example; and therefore it would be exceedingly desirable, both in point of economy, and to check the inducements towards adulteration, if substitutes, of easy access and cheap materials, could be procured. This is leaving out of the question the chance or hope of discovering useful properties in the new articles investigated.

The potatoe, being a species of solanum, might be conceived, as Dr. Latham observes, to possess qualities analogous to others of that class; " but experiments to ascertain the fact had hitherto been wanting to fix its character as an article of materia medica." Accident led Dr. Latham to ascertain the narcotic powers of this plant on the human body, and he thinks the effects produced in the following cases " will perhaps entitle it to a rank of no mean estimation in the catalogue of medicines."

From about seven pounds of the leaves and stalks, Mr. Hume, of Long Acre, prepared for Dr. L. nearly a pound of extract, in the taste of which there was nothing peculiar that might prove disgusting to the patient. The dose, at first, was half a grain three times a day, which was soon raised to two grains at a dose.

The first patient to whom Dr. Latham exhibited the medicine, and by whom he ascertained the dose, laboured under cough, with mucous expectoration. "As much relief was obtained as might have been expected from the extract of conium, under similar circumstances. No distress was felt in the system; but the patient imagined that his bowels were rather more relaxed than was usual with him."

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* We suppose it will soon be necessary to send patients to Italy, or the South of France, for blindness, corns, warts, &c.

The second was a very old case of rheumatism, with distortion of the limbs, articular nodosities, chronic cough, and at times intolerable headache. While taking the smaller doses of the extract, the patient felt something like the tremor and disturbance sometimes produced by digitalis. The solanum was therefore suspended for a few days and again renewed. The dose was now gradually increased to a grain every six hours, and, in a few days, to *two grains* with directions, should stupor or tremor come on, to discontinue the medicine. The tremor did come on, and the dose was ommitted *once*. It was them resumed with considerable advantage, the cough and other painful affections being much alleviated. Three grains of the extract with one of rhubarb were now ordered three times a day; "and after an interval of three days I found her still freer from pain, and more comfortable, as she expressed herself, than she had been for several months. A few days afterwards, however, the tremor, with much headache, recurred and continued for some time. These went off by a dose or two of rhubarb.

The third case was that of a lady who had a small calculus lodged in the ureter. She was ordered three grains of the extract three times a day, from which she experienced much relief. In four days the piece of gravel passed into the bladder, and was afterwards voided. She was soon quite well.

We shall pass over the two next cases, as not very satisfactory, to notice the sixth, which we shall quote entire.

> "A young gentleman, about twenty years of age, had been afflicted with almost constant cephalalgia for two or three years. Various had been the means employed to procure relief, without any sensible advantage; bleeding, cupping, leeches, blisters, purgatives, antimonials, mercurials, &c. had successively been tried, and afforded not the least benefit. I put him also upon several plans without any permanent relief; conium with submurias hydrargyri, steel with aloetic preparations were tried. The rectified oil of turpentine was then given in the dose of an ounce and a half at once. Some remissions were certainly experienced for an hour or two in the day, and after the turpentine, for a whole day, but then the pain recurred as usual. I now directed three grains of the extract of solanum three times a day, having indeed about a fortnight before, given him the smaller doses of one grain without any effect. After having tried the solanum in the increased dose for a week, he came to me in a much improved state, not having had any pain for a longer time than half an hour in the day, and that in a greatly mitigated degree. In a few days, however, the pain returned, and I directed the dose to be gradually increased to six grains. He could

not go beyond five grains, for after each dose considerable stupor was produced for about two hours, when the pain returned, although in a less degree. He was now desirous of returning into the country, where I recommended him a plan of decoct aloes with chalybeate wine." 102.

The last case was one of supposed angina pectoris from water in the chest or perhaps organic disease of the heart itself. Under the use of the solanum tuberosum, "his pulse certainly became regular, and he thought himself better, as he had been able to call upon me with less difficulty. He felt the same tremors from its use as were observed in other cases." 103.

Dr Latham declines detailing several other cases, as the results were very similar to those here stated. A medical friend of his has already advanced the dose to thirty grains, at a time, in a case of cancer of the uterus. Dr. L. concludes thus..

> "I am unwilling to say more about the solanum tuberosum, lest I should hereafter be found to have said too much; but I think it superior to hyoscyamus and conium, and therefore with confidence recommend it to my professional brethren, not only in cases where those medicines have been most commonly employed, but generally in all chronic cases where there may be excess of painful irritation or irregularity of action." 104.

We hope those of our brethren who are attached to public institutions, will give this medicinal substance a fair trial as to its narcotic powers, in consequence of Dr. Latham's recommendation.

On certain painful Affections of the Intestinal Canal. By RICHARD POWELL, M. D. Fellow of the Royal College of Physicians, &c. &c.

DR. Powell jusly observes that a knowledge of the causes of disease is always desirable, but not seldom obscure. Every attempt then to establish the relations between cause and effect, is deserving of attention, and will receive it from the profession.

> "Whenever," says Dr. Powell, "violent pain takes place in the epigastric region of the abdomen, exacerbating in paroxysms accompanied by sickness, yellowness of the eyes and skin, and urine, by clay-coloured fæces, and without any proportionate increase of action in the circulation, biliary concretions are supposed to be forcing through the ducts; and when these symptoms abate, it is inferred that their passage into the duodenum has been effected."

It is usual, Dr. P. observes, to examine the stools upon these occasions, though the search is often ineffectual. The biliary concretions, however, are thought to escape, or to be dissolved after they are freed from the biliary ducts. It is Dr. Powell's object in the present paper, to shew that the symptoms usually ascribed to the passage of biliary calculi "are also referable to another cause." And as in the case of biliary concretions, we may naturally expect a repetition of attacks, and no very speedy termination of the patient's sufferings, so, on the contrary, Dr. Powell conceives that "the sort of attack to be here described is more isolated, and when once it has passed, its recurrence is by no means equally to be dreaded as is that of the former."

When our author has suspected the passage of biliary concretions, he has directed the usual large pan to be filled with water, and the fæces to be stirred in it, after which the water has been left to rest long enough to ascertain whether the concretions, as they often do, have risen to the surface. This water he pours off ,and repeated similar affusions are made, time being allowed for subsidence between each. The residue is then to be examined. This residue, in the cases to which Dr. Powell refers, "has exhibited a large quantity of flakes mostly torn into irregular shapes, and appearing to have formed parts of an extensive adventitious membrane of no great tenacity or firmness." In the first case that came under Dr. Powell's notice, this membrane was passed in perfect tubes, "some of them full half a yard in length, and certainly sufficient in quantity to have lined the whole intestinal canal." In the others also, the aggregate quantity has been very large, and continued to come away for many days, in irregular thin flakes, of but one or two inches in extent, and not perfectly tubular. Dr. P. has definitely examined four such cases, in all of which the leading symptoms led him to suspect the passage of biliary concretions at the time. They were all adult females. In but one of these our author had been consulted for *previous* ill health.

"She had frequently suffered from occasional pain in the intestines, and derangement of her powers of digestion, with flatulence, and a sense of suffocation. She was always relieved, at the time, by mild opening medicine, and believed herself able to prevent the attacks of pain from increasing to any serious degree of violence, by repeating it according to circumstances. A similar history of liability to frequent recurrence of pain, accompanied by indigestion, was related to me in the other instances. The more violent seizures under which I saw all the patients, consisted in a sudden and excessive pain in the epigastric region, increasing in paroxysms very frequently, rather relieved by pressure of the patient herself at the time, but leaving great soreness and tenderness during the intervals This state continued under four days; during it the stomach was very irritable, and the tongue coated and clammy. Jaundice came on at an early period, and the stools were white, brown, or somewhat greenish, and streaked in colours, until the films began to pass, when they were mixed with a full sufficiency of bile, but not at first of a healthy colour. The pulse throughout was calm, moderate, and natural, in none of the instances amounting to 90." P 112.

There was no indication of inflammation. In one instance Dr. Powell noticed a considerable hardness and contraction of the abdominal muscles; in another case there was superadded to the above symptoms a difficulty in passing the urine, with pain in the region of the bladder, requiring the use of the catheter.

Suspecting the passage of concretions, in these cases, Dr. P. did not order venesection or emetics.

" The practice, indeed, which appeared to me most advantageous, was the steady use of a mixture of the infusum gentianæ compositum and infusum sennæ, with the addition of from ♏. X to ♏ XX of liquor potassæ, repeated so as to produce four or more stools in the twenty-four hours. Under its use the flakes first separated, and continued to do so, in great abundance; the jaundice disappeared, and the patients recovered health and strength." P. 114.

Saline purgatives had been tried at first, but under their use the canal did not appear so completely to discharge its contents as when the medicine abovementioned was exhibited.

Dr. Powell observes that the formation of adventitious membranes in the intestinal canal has not been so frequently noticed as it has in circumscribed cavities. " The appearance which comes nearest to it, both in resemblance and situation, is the membrane formed in the trachea under croup," but the symptoms are there more violent and destructive from locality of situation. The most remarkable circumstance, our author thinks, is " the production of an effect usually ascribed to inflammatory action without its previous existence." Coagulable lymph is known to be thrown out upon the mucous membrane of the intestines in inflammation, but in the cases in question, Dr. Powell thinks there was no evidence of an inflammatory process going on, as the pain was rather of a spasmodic nature, and the skin and pulse remained natural. Our author missed the opportunity of chemically examining the flakes thus evacuated; but a quantity of them put into spirit of wine " was contracted by its action, so as to look almost fibrous rather than membraneous, as at first, by which one would be led to suppose that they may consist of albumen, though this is only a supposition."

We have not interrupted the thread of the analysis, in order that we might introduce a few observations of our own at the end. We have seen several cases of the kind described by Dr. Powell, and we have experienced them personally, so that our attention has been a good deal directed to the pathology and treatment of the complaint.

Every one who has much of dysentery, whether in hot or cold climates, must have observed those portions of adventitious membrane (if the term be allowed) frequently come away, especially towards the close of the disease in bad or fatal cases.* The symptoms during life, and the examinations after death, have pretty clearly proved these productions to be the result of great irritation and inflammation in the mucous membrane of the intestines: we know too that irritating substances swallowed have caused tubular exudations to be formed and thrown off by stool, precisely similar to those we are speaking of. Tartra, for instance, relates the case of a woman who had swallowed a quantity of nitric acid, and who, on the twentieth day afterwards, passed, *per annum*, a long membraneous packet, in one entire piece, rolled up and folded on itself, which, on being disentangled, exhibited a complete mould of the œsophagus and stomach, with all their sinuosities. From the moment this was thrown off, the internal surfacc of the œsophagus and stomach decame so sensible and irritable that death ensued in a few days.†

"Thd false membranes," says Villermé, "of the mucous membrane of the alimentary canal, are perfectly similar to those formed in croup. The fragments passed by vomiting or by stool, are generally soft, pulpy, and without any appearance of organization. *The re-agents which concrete albumen render them hard.* Sometimes these flakes are considerable, and when developed in water, represent entire tubes broken off irregularly at the ends, which have led to the erroneous opinion that they were portions of the mucous membrane of the intestines. I have had occasion to see great quantities of these adventitious membranes passed by stool, in the colic of Madrid. They were generally of a gelatinous consistence, and inveloped in mucus. One of these exhibited an exact mould of the intestine, being tubular, and some inches in length." *Dict. des Sciences Med.* vol. 32, *p.* 261.

In such cases there can be little doubt of the formation of these false membranes being the legitimate product of irritation and inflammation, in the same way as they are formed on the serous surfaces, as we shewed in our article on peritonitis. But we meet with the said membraneous substances under very opposite circumstances; viz. in sedentary persons, especially females, who have languid and imperfect digestion, with a torpid state of the biliary and intestinal secretions. Here gelatinous concretions would appear to take place on the internal surface of the intestines, and even the hepatic ducts themselves, from mere remora of the fluids and want of energy in the secretory glands and organs. To this obstruction of the biliary ducts, we have traced many instances of jaundice, accompanied by all the symptoms attending the passage of a biliary calculus, as described by Dr. Powell. At the decline of the disease, we have not only seen the membraneous fragments mentioned by Dr. Powell, but we have seen substances resembling worms or vermicelli, of different sizes and lengths, and which were evidently of the same nature as those broader fragments that had lined the intestines. We conceive they had lined the hepatic ducts. The cases detailed by Dr. Powell all evinced obstruction to the flow of bile into the intestines, and regurgitation of the same into the current of the circulation, accompanied, of course, by icterous suffusion and white stools.

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* See Morgagni, 31st Epistle, for example.

† A. B. Tartra, de l'empoisonnement par l'acide nitrique, p. 169.

To those, however, who may feel difficulty in conceiving that these albuminous incrustations can be owing to mere inactivity of the secretions, we would suggest another view of the subject. Where we find defective and irregular secretions of the chylopoietic viscera, we almost invariably find the secreted fluids depraved in quality—being sometimes extremely acrid, fetid, and irritating; at others, scanty and insipid. Now, whoever has been so unfortunate as to be afflicted in this way, can vouch for the train of painful and uneasy sensations which occupy the line of the alimentary canal, while these depraved secretions are passing, and will very readily believe that such sources of irritation may be quite adequate to the production of those gelatinous exudations, which, in other cases, have been clearly traced to irritation and inflammation. That the irritation of depraved bile itself has often caused spasmodic constrictions of the biliary ducts, and thereby produced jaundice, is believed by many; and it is stated in a recent publication, on affections of the liver, that—

> "The symptoms attending these spasmodic constrictions of the biliary ducts are sometimes as violent as those where calculi are impacted. Indeed it appears to be the spasm, in both cases, that causes the intense pain."*

The same author observes that:—

> "The passions have a most remarkable effect on the secretion, and also on the ducts of the liver. A fit of anger will so derange the state of the bile, as to tinge the skin yellow in a few hours. *A sudden and unnatural acrimony of a secretion may very readily excite the organic contractibility of a tissue composing a canal, and thus occasion a stricture of its calibre for the time being.* In this way I have no doubt that jaundice is often induced by mental emotions, as anger, jealousy, grief, &c.†

In addition to the judicious therapeutical measures detailed by Dr. Powell, in the complaint under consideration, we may be permitted to state that in the paroxysms we have found the warm bath—warm fomentations—leeches—and blisters, serviceable as external remedies; and that internally, we have been in the habit of allaying the pain and irritation first, by pretty large doses of opium and hyoscyamus, and then acting on the bowels pretty briskly by compound extract of colocynth, calomel, and hyoscyamus, aided by purgative enemata to solicit the peristaltic action.

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* On Derangements of the Liver, p. 77.

† Ibid. p. 76.

It is of more importance, however, to prevent the recurrence of these distressing attacks, and we are convinced that this can only be effected by not only regulating the state of the bowels, but by correcting the depraved secretions themselves. This is to be done by strict regimen, great attention to the functions of the skin, and by such remedies as act on the biliary secretion. We have recently removed the tendency to this complaint in a lady, who for several years, seldom passed two months without an attack similar to what Dr. Powell discribes, by alterative aperients, generally aloes, soap, blue pill, and ipecacuan, together with a steady perseverance in the use of the nitro-muriatic acid bath. She now rarely takes any medicine internally; but has recourse to the bath, when the secretions become dark or light-coloured, by which means they soon became improved. She has experienced no attack for seven or eight months past.

We think the profession are much indebted to Dr. Powell for having drawn their attention to a painful complaint whose etiology was badly understood, or absolutely mistaken in many cases, and whose treatment was consequently defective.

Narrative of Facts relative to the repeated Appearance, Propagation, and Extinction of Plague among the British Troops in Egypt, in the Years 1801-2-3. By John Webb, Director General of the Ordinance Medical Department.

Although it is highly improbable that, under existing circumstances, and in the present improved state of society, the plague shall ever revisit, or, at all events, *spread* on the British soil, yet the solid proofs of its peculiar and contagious nature, (drawn from ample experience, not insane reveries of the closet,) are deserving of record, in order, at any future time, to silence the idle dreams or visionary speculations of those who may endeavour to force themselves into notice, not by the exertion of well-applied talent, but a pugnacious attack upon some well-founded principle.

The great body of this paper is taken up with official documentary evidence of the facts mentioned in the title of the article, and which we must pass over, as not necessary to be noticed in this place. They clearly establish the contagious character of the disease, and exhibit practical examples of the means of bounding its ravages, when it unfortunately finds its way into a fleet or an army.

> " So far," says Mr. Webb, " as my own experience, aided by enquiries, enables me to form an opinion on this intricate subject, I am inclined to consider the plague as much an inhabitant of Egypt, as the small-pox is of England." And again—" various other particulars occur to my mind, in confirmation of what I have advanced, but presuming those I have already adduced are amply sufficient to prove the contagious nature of the plague, I shall only beg to say, in conclusion, that if I were again so circumstanced as to have the care of preserving the army, or a community from the calamities it occasions, confided to me, I should consider no plan of precaution of any avail, if not founded on a full admission that pestilential contagion is one of the most subtle poisons that exists, as well as the most destructive to human life; and that there is no safety for strangers in the countries subjected to its ravages, whether the disease be prevalent or not, but in adopting and uniformly observing teh strictest precautions to avoid the sphere of its action." 168.

It is needless to say that in these sentiments we entirely agree, with an exception to the first sentence. For as we do not consider the small pox an inhabitant of England, particularly, neither do we believe that the plague is bounded by the limits of Egypt. This would be making them local or endemic diseases, whereas we know them to be specific contagions, very capable of being transported from place to place, and even from country to country.

Our analysis of the volume under review will be continued in the next number of this journal.

Practical Essays on Surgery and Ophthalmology. By Ph. Fr. Walther, M. & C. D. Professor of Surgery and Clinical Surgery in the University of Landshut, &c. Volume 1st, 3 plates. 8vo. pp. 504.

(From the Quarterly Journal of Foreign Medicine and Surgery.)

There are four Essays in this volume: 1. on the diseases of the crystalline lens, and the origin of cataract, page 1. 2. On amputation at the joints, particularly at the shoulder, and between the first and second row of the bones of the tarsus, p. 91 3. On the use of mercury in tetanus and hydrophobia, p. 166. On the varieties of inflammation occurring in the eye, and their symptoms, p. 359.

It is certainly somewhat singular that the pathology of a disease so frequent in its occurrence as cataract, should not hitherto have been investigated; that, contented with observing opacity of the lens, we should not have inquired into the causes of so striking a change, and made it a matter of inquiry whether the loss of transparency in the lens constitutes of itself a disease, or be merely the common product of various morbid affections of the lens and its capsule. In the first essay of the present volume, we have an attempt to supply these desiderata, that essay containing a description of some of those processes which precede or accompany the loss of transparency in the lens and its capsule. That the structure and mode of nourishment of these parts gives a peculiar character to their diseases, cannot be a matter of doubt. Whether the fibrous structure of the lens, discovered by Reil, exists during life, or only takes place after death, is a matter of less consequence to our present inquiry; of more importance is the question, how the lens, floating loose in its capsule, and unconnected to it either by cellular membrane or vessels, is nourished. It is no doubt true, that some have inferred the existence of a vascular communication between the capsule and lens, but it has never been detected by the senses either in man or animals, and the supposition that this is rendered impossible from the extreme minuteness of the vessels, is contrary to all analogy. Where an organ is contained loose in a cavity, its blood-vessels come to it in the form of a few large trunks enveloped in a process of the lining membrane of the cavity as is the case with the testicle; and where the vessels are distributed from the whole inner surface of the membrane to the organ it covers, they are in the form of a minute network, and the two parts are then necessarily adherent, as for instance the periosteum and bone. Our author is of opinion, that there are no vessels going from the capsule to the lens, but that the latter is nourished by imbibition; that it absorbs its nourishment from the liquor morgagni, into which it again deposits its waste; or, that the lens is nourished in the same way as plants and those animals in which there is no regular circulation, but merely absorbent and exhalent vessels having no common centre. On this view of the subject, the nourishment of the lens must depend on the integrity of the few vessels which go to the capsule from the central artery of the retina and those of the corpus ciliare. When contusions attended with considerable concussion of the eyeball occur, these vessels becoming lacerated, the secretion of the liquor morgagni is interrupted, and the loss of transparency of the lens ensues; the same is the consequence of the obliteration of these vessels in old age. The healthy secretion of the liquor morgagni is likewise necessary for preserving the pellucidity of the lens, for when that fluid becomes intransparent, constituting cataracta Morgagniana, it is always quickly followed by opacity of the lens. In a similar manner, the capsule rarely becomes opaque without the lens becoming affected, and when it does occur, which is only in young individuals, the transparency of the lens is never quite perfect, and never of long continuance.

Our author is inclined to think that the lens is originally turbid in the fœtus, for it is scarcely possible to conceive such processes taking place in the fœtus as would render a lens, previously clear and transparent opaque. Congenital cataract is the consequence of a check being given to the development and progressive metamorphosis of the embryon. In this it agrees with other malformations, which do not arise accidentally from the influence of particular causes, but are actually originally present in every human embryon at certain periods of its existence, and afterwards disappear in the progress of that embryon to more perfect and nobler forms; whilst on the contrary, should this progressive metamorphosis be checked, the imperfect condition remains, and is met with still existing at birth. In dissecting fœtuses under the age of three months, our author has generally found hare lip existing, and the palate cleft so as to leave but one cavity for the mouth and nostrils which is afterwards divided by a septum. The iris is originally imperforated; and imperforation is the primary state of all parts where the apertures of the body are afterwards formed. The anus, vagina, &c. are originally covered with a production of the integuments. Anchyloblepharon and symblepharon are original conditions of the eyelids, and it is only at a certain stage of the life of the embryon that these curtains detach themselves from the eyeball which is then naked, but is afterwards covered by a reflection of the integuments, previous to which a horizontal chink opens in the eyelids. Umbilical hernia at one time is present in every embryon, for the cavities of the abdomen and umbilical cord are one, and the intestines being contained in both indifferently, there is then no ring (umbilicus) to form limits to each.

These analogies, which might be pushed much further, leave little doubt that cataract is originally a natural state of the lens, which subsequently becomes clear and transparent by continued progressive development. There are two kinds of congenital cataract; in the one, the cataracta lactea, the milky fluid which fills the capsule would seem to be the real matrical fluid out of which the lens is evolved; in the other, the cataracta centralis, the generative impulse has been sufficient to render the outer laminæ alone of the lens tranparent, leaving its centre in its turbid state.

Cataract frequently arises during inflammation of the internal parts of the eye, so that there can be no doubt of its being produced by that process; and as will be afterwards shown, inflammation not only attacks the capsule, but even the lens itself, occasioning turbidity of these parts. One of the most evident cataracts from this cause is that which follows wounds of the eye, in which the turbidity forms in the course of a short time during the progress of the inflammation consequent to the injury, and, as many good practitioners have taught us, disappears under the continued use of antiphlogistic remedies. There is another cataract which succeeds wounds, particularly contusions, accompanied wth considerable concussion of the eyeball, but it is not the effect of inflammation: it occurs a long time, perhaps months, after the accident, and arises from the laceration of the few delicate blood vessels which go to the capsule. The opacity of the lens, which originates during the syphilitic and arthritic ophthalmiæ, no doubt arises from the inflammation spreading to the capsule. And in those cases, which are not very rare, where the lens is universally adherent to its capsule, both of these parts must have been the seat of inflammation.

The analogy between the effects of inflammation in altering the transparency of the lens and other pellucid parts of the eye, is striking. Suffusion of the cornea is almost the sole symptom of corneitis, for when red vessels appear among the lamellæ of this membrane it is only from a particularly violent inflammation, and the appearance of these vessels has always been preceded by the suffusion. Specks of the cornea, from the thinnest nebulæ to the thickest leucoma, are simply partial indurations of the cornea, the consequence of previous inflammation. Glaucoma, presuming it to consist in partial or total opacity of the tunica hyaloidea, never occurs, according to our author's experience, without preceding inflammation of the internal parts of the posterior hemisphere of the eye.

Many symptoms which accompany the early stages of cataract denote the presence, if not of acute, at least of chronic inflammation. To this may be referred the great sensibility to light which sometimes remains even after the cataract is fully formed.

Gleize has remarked, and it is well known to all attentive practitioners, that in operating on cases of cataract in which the turbidity is of recent existence, there is always a greater tendency to inflammation succeeding the operation; so that if both eyes of a patient affected with cataract be operated upon exactly in the same way in every respect, the inflammation which attacks the eye that has been last affected is usually most violent, owing probably to the still existing slight in-inflammatory action in this eye, which here, as elsewhere, disappears as the inflammation terminates in induraton.

Professor Walther has repeatedly observed inflammation in the capsule, and pointed out cases of it to his pupils, who after having been once accustomed to such examinations, have readily distinguished it themselves. It usually occurred in men about the middle of life and of a slightly cachectic disposition, and was always preceded by a string of various local affections, which had often commenced with itch, gout, or catarrhal affections. The disease occurs oftener in light eyes than dark, and is always accompanied with a slight change in the colour of the iris and form of the pupil, the first becoming a little darker, and the pupil slightly oval and drawn upwards and inwards to the root of the nose. The motions of the iris are at first more lively and extensive to partial variations of light, but subsequently they become more sluggish. The pupil is habitually smaller than in the sound state, and there usually exists a black ring of irregular breadth all round its edge, produced by a real eversion of the uvea, that is, the pupillary edge of this projects beyond the same edge of the real or anterior membrane of the iris.

Along with these symptoms, a number of red vessels now appear in the pupil itself, the largest of which are visible to the naked eye, which has been accustomed to such investigations, but the greater number are only distinguishable with the aid of a sextuple magnifying glass. What to the first appears merely a red point, assumes, under the glass, the appearance of a most delicate tissue of vessels. The lenses used for such microscopical examination of the living eye should have a very short focus, and the patient ought to be so placed with respect to the light that the parts within the pupil be well illuminated, and not shaded by the glass or head of the examinator. In order to have the pupil as large as possible, the other eye should be kept closed during the examination, and a little of the solution of the extract of belladonna may be dropped between the eyelids an hour previously. And in inflammation of the capsule of the lens, the sensibility not being much increased, the patient can bear examination of the eye in a strong light, and with dilated pupils, without much uneasiness.

The red vessels observed in the pupil during inflammation of the capsule always constitute a sort of vascular wreath, situated at about a quarter of a line's distance from the pupillary edge of the iris; this wreath forms a concentric circle with the pupil, and is found on examination to consist, not of a circularly disposed vessel or vessels, but of a number of vascular arches, similar to those formed by the arteries of the palm of the hand and joint of the knee. To this vascular wreath there run in a radiated form, as to a common centre, numerous vessels from the periphery of the anterior capsule. Some vessels seem to extend from the pigmentum of the uvea into the capsule, and might lead us to suppose that all the vessels seen in the pupil are merely prolongations of those on the posterior surface of the iris. This, however, is not the case; sometimes there are no such vessels present; where they are, it is only after the disease has lasted some time that they appear; whilst at other times, vessels are seen prolonged from the capsule into the uvea, reciprocally as those of the latter into the former. Besides, these prolonged vessels are observed to have an oblique direction with respect to the axis of the eye, and they never are the largest trunks, which we see come from the edge or circumference of the capsule. The vessels going between the iris and capsule never arise from the very edge of the former, but at a little distance from it on the posterior surface, so that nearly a line's breadth of the pupillary portion is free from these vascular sproutings.

From the vascular wreath we have described, vessels are seen spreading towards the centre of the anterior capsule, and there again forming clusters and arches; and although the connexion between the vessels seen in different parts of the pupil seems interrupted at some points, yet there is no doubt it holds good universally, although, from the extremely minute size of the vessels, they cannot be distinguished.

Posterior to the red vessels seen in the capsule, there appears in some cases a network of more delicate vessels deeper seated developed in the lens itself, the larger trunks of which are not always derived from the circumference of that body, but evidently come from its posterior surface directly forwards and then divide into branches.

The presence of these vessels in the lens, our author has repeatedly and distinctly observed, and he states that they present one of the most beautiful phenomena possible; that the only thing that comes near them is the finest injections of the choroid coat of the eye, such as are possessed by Sœmmering, and that the most successful injections of the villous coat of the intestines are far inferior to them. The existence of these vessels in the body of the lens in a state of inflammation, would seem to contradict the theory of the nutrition of that body which has been previously mentioned, and the supposed non-existence of vascular connexion between the lens and its capsule. However, our author is of opinion that the vascular connexion between these is entirely morbid, and is the same as that which occurs in inflammation of the chest where vessels are prolonged from the surface of the pleura into the pseudo-membrane formed on its surface, and that as the vessels of the anterior capsule shoot forwards into the pigmentum of the iris, so in a similar way they shoot backwards into the lens itself, and that the same holds good with respect to those of the posterior capsule, which, being more copiously supplied with vessels, explains the fact of the largest vessels in the lens being seen to come from behind forwards. Moreover, it would appear that all inflammations of the lens begin in the capsule and thence spread to the former, in the same way that it often happens that inflammation seated primarily in the neighbouring parts, as the membrane of the vitreous humour, the corpus ciliare, and iris, sometimes extends in a secondary manner to the capsule.

At the apparent terminations of several of the vessels in the capsule, we distinctly perceive small knotty points of a whitish gray semi-transparent substance, evidently coagulable lymph, the presence of which effusion serves to disclose the manner in which inflammation of the lens and capsule produces opacity in these parts. The anterior capsule, where the vessels are very numerous, sometimes assumes a peculiar velvety floculent gray or brownish appearance, which has led some to the idea that a flake of the pigmentum of the iris or choroid has been detached and become adherent to the capsule of the lens, and which has led to the cataracta choroidea of Richter. But this is a mistake; we never find that a piece of the pigmentum has been detached, even when the greatest violence has been offered to the eye, the corpus ciliare lacerated, and blood effused into the chambers of the eye and under the conjunctiva. And even supposing it detached, would it become adherent to the capsule, instead of floating in the aqueous humour and being absorbed? The brownish spots on the anterior capsule are in some cases occasioned by the effusion of lymph, and by the extreme terminations of the vessels; and our author has several times in this kind of cataract, which is not at all rare, observed, with the aid of a magnifying glass, the vessels of the capsule and their prolongation into the spots mentioned. In other cases, the capsule had been previously united to the uvea by partial adhesions, and being separated either by the more lively motions of the iris, or by the application of mechanical violence, part of the pigmentum of the uvea had remained attached and adherent to the anterior surface of the capsule.

As to the state of the patient's vision who is affected with inflammation of the capsule of the lens, when the disease is severe, vision is indistinct and confused, particularly when looking at distant objects, whereas those that are nearer are seen as if through a fine gauze, but without distinguishing therein some threads larger than others corresponding to the vessels. Neither does this gauze seem red, nor are objects tinged with that colour.

Inflammation of the lens, as that of the bones, cartilages, and fibrous textures, always observe a chronic course. It proceeds very slowly, and is accompanied with little pain; nay, in some cases, none whatever, and when pain is present, it is not seated in the part itself, but at the bottom of the orbit, over the forehead, or in the crown. When the disease has lasted some time, the blood-vessels in the lens and capsule become varicose and remain stationary so. This state of the lens is the same in kind with that which Scarpa and others have observed in the external parts of the eye, and called ophthalmia varicosa—a state intermediate between inflammation and its consequences. In a middle-aged man, whose mother had had cataract and her vision restored by extraction, our author observed the vessels of the lens to remain in their varicose state a whole year without undergoing the least alteration.

The various kinds of cataract correspond with the different terminations of inflammation, thus the firm hard cataract is induration of the lens; the fluid cataract, where the capsule contains a milky and puriform fluid, seems to correspond with suppuration in other parts; and in the cataracta arida siliquata the lens is in the state of dry gangrene.

In order to understand in what manner inflammation produces opacity or induration of the lens, we may refer to the origin of specks of the cornea from corneitis, when these are not occasioned by abscesses of that membrane. During the inflammation, the secretion of the serous vapour (which occupies the interstices between the lamellæ, keeps these separate, and preserves the transparency of the whole,) is either morbid in quality, or it is entirely suspended. In the latter case the lamellæ come into direct contact and unite to each other by adhesive inflammation, whilst in the first case, instead of the clear serous vapour, coagulable or even puriform lymph is poured out between the lamellæ, and unites them together as a pseudo-membrane, and in both cases opacity of the places where the lamellæ are adherent is the consequence. In the same way as those of the cornea, the lamellæ of the lens also become adherent, in consequence of inflammation, the secretion of the vapour between them being stopped or vitiated. The turbidity which is the consequence is at first of a whey colour and partial, and, by degrees, extends to the whole lens; the seat of the beginning of the opacity is uncertain, sometimes one place and sometimes another, in which this kind of cataract differs from the cataracta senilis, where the opacity begins in the centre of the lens and extends to the circumference.

Though, from the structure of the lens, inflammation is most apt to end in induration, suppuration of it occurs frequently enough, for we must consider this as the cause of the cataracta lactea or purulenta, and the variety of it the cataracta bursata seu cum bursa ichorem continente of J. A. Schmidt. In the first, the lens is found wasted away, and its place occupied by a white milky fluid contained in the capsule, which is sometimes so like pus in its appearance as to have given occasion to the name of cataracta purulenta being long since given to it. La Peyronie found a puriform fluid between the capsule and partially wasted lens; and in the cataracta bursata, where besides the cataractous lens there is a sac filled with ichor in the opaque capsule, it seems that this can only have arisen from partial suppuration of the lens.

In the cataract named by Schmidt, arida siliquata, the lens and capsule are quite exsiccated like a piece of mummy, and shrunk up into very little bulk as other completely sphacelated parts.

Induration of the lens may also take place without inflammation, and then it seems more of a scirrhous nature; indeed it is well known that cataract often occurs at the period of life, and under circumstances which appear to favour the occurrence of scirrhus in other parts of the body. Purulent cataract may sometimes also be the effect of ulceration of the lens.

Besides inflammation, suppuration, induration, sphacelus, and varicosity of the vessels of the lens and its capsule, there are other affections of it which appear to be of a sarcomatous nature, such are the cataracta pyramidata, cataracta cum zonula, and cataracta arborescens. In the first (the pyramidata,) from the opaque capsule, which is likewise thickened and contains a turbid caseous fluid, there projects an opaque substance of a pyramidal shape, having its point passing through the pupil into the anterior chamber, and in the substance of the capsule are seen shining silvery streaks running in various directions, and sometimes points on its surface of the same appearance. In the cataracta arborescens the peculiar affection is not confined to the capsule, but involves also the lens, where between the different opaque streaks the rest of that body is quite transparent.

In giving the analysis of this Essay, we have been anxious to keep as strictly as possible to our author's meaning, convinced that however visionary some of his opinions may at first sight appear, still they have the merit of being ingenious and original, and merit on these accounts to be candidly laid before the profession. As for the facts concerning the inflammation of the lens, we have no doubt of their truth, and we may add the words of the author, "that these must produce practical results, although they are not touched upon in the Essay itself. To instance one, I consider incipient cataract no longer incurable, and I have already combatted it with success in some cases."

From the full account we have given of the first Essay of this volume, and the press of other important matter, we must leave the consideration of the others to a future opportunity.

Journal de Physiologie, &c.—Journal of Experimental Physiology. By F. MAGENDIE.

Vol I. No. 1. January, 1821.

(From the Medical Intelligencer for February, 1821.)

IF a correct knowledge of the laws which govern the animal economy be really attainable; then is physiology a study deserving our utmost attention;—and the labours of those who pursue it with the greatest ardour, are fit objects for our consideration. In this point of view, the editor of the French journal, which we have the gratification of being the first to introduce to the English reader, claims our warmest thanks, and the public applause. Known, for many years, by all the scientific men in Europe, as one of the foremost in experimental investigations, Dr. Magendie, "yet young in age," bids fair to extend the dominion of physiology far beyond the limits which the misinterpretation of animal phenomena, the absurdities of mathematical application, and the intrusion of chemistry, seemed, hitherto, to have assigned to it. We are not prepared to deny, altogether, the justice of Professor Harless' opinion,—that modern experimentalists in physiology, are men for the most part, the least qualified to advance the progress of that science, from their wanting the intellectual talents requisite to enable them to reason well on what *they* may observe; but we can doubtlessly, assert, at the same time, without fear of being contradicted by the Professor himself, that where the ready conception of new experiments is associated with a right discrimination in the application of their results, the study of animal life, with its various functions, cannot fail to make as much progress, as will ever be conceded to us by its mysterious nature. There is, moreover, another great advantage which we derive from the labours of experimental physiologists, and which consists in the opportunity, afforded us by their immediate publication, of applying our own intellectual faculties to their right interpretation. Thus, an insulated fact, first imagined by a solitary mind, in the retirement of the closet, and next proved to be correct by the unassisted experimentalist, being afterwards detailed to the scientific world, may, by the exertion of their united powers of reflection, be converted into a source of the most brilliant doctrines, or the most useful discoveries. In this respect, then, M. Magendie will be found to have deserved well of his brethren, in undertaking to publish a periodical work, specifically dedicated to the investigation of physiological truths. This work will appear quarterly, in numbers, containing from eighty to ninety pages of matter, illustrated with occasional plates; and, although edited by Dr. Magendie himself, who, of course, will supply the largest portion of the information it is intended to contain, communications of importance, on the subject of physiology, will be found in it, from other respectable authors. Of Dr. Magendie's fitness to conduct a publication of this nature, there is need of no testimonial from us, to enable our readers to judge. But we may be allowed, perhaps, to indulge in an act of friendship,—which is the more gratifying to us, because just,—and state, that we know of no person better qualified for the task; and, that, having founded a new school in the French capital, "for the delivery of lectures on experimental physiology, and the physiological action of remedies on the animal system," which we had the good fortune to attend, some years back,—his qualifications for superintending the compilation of the present repertory of physiological knowledge seem indisputable.

ART. I. *Memoire sur le Mecanisme, &c.—Memoir on the Mechanism of Absorption in warm and red blooded Animals.* By F. MAGENDIE. (Read at the Royal Institute of France, October, 1820.)

On the reality of the phenomenon of absorption, there is now no dispute. But this fact once established, it became necessary to ascertain by what organs that important function was performed. The author of the present memoir having, on former occasions, investigated this subject, thought himself authorized to conclude—1st, That the veins possess the faculty of absorption. 2d, That no proof exists of the chyliferous vessels absorbing any other substance than chyle. 3d, That the absorbent power of the lymphatic vessels, properly so called, has not yet been established by satisfactory evidence. Many secondary facts, the author contends, were thus explained, which had before remained in obscurity; but the principal question, that concerning the *mechanism* of absorption, continued as yet unexplained. Dr. Magendie asserts, that nothing positive, on this subject, has been advanced by preceding writers; and he, therefore, trusts, that the experiments which he has detailed in the present memoir, will serve to throw some light upon this important question. Having mentioned the circumstances which led him to institute those experiments, he proceeds to describe them with much precision, accompanying them, at the same time, with appropriate remarks. These experiments consist, chiefly, in producing a sort of artificial plethora, by injecting, in the veins of a dog, nearly thirty ounces of water; and in introducing into the pleura, a given quanity of a substance, the effects of which, on the animal system, are known to be produced through the means of absorption. In all these cases, where artificial plethora had been induced, and the veins consequently distended, no absorption took place, or only in a slight degree, and after a greater length of time, than under ordinary circumstances. The converse of these experiments being made, a result took place the reverse of that which had been obtained by artificial plethora; that is to say, that having diminished, by venesection, the original quantity of blood in another dog, the action of certain substances, to which the absorbent system was afterwards subjected, followed in one fourth of the time in which it is known to occur when depletion has not been previously had recourse to.

To obviate the objection which might have been raised, that the change brought about in the blood by the addition of water to it, and not the distention of the blood vessels, was the cause of the want of absorption: Dr. Magendie bled a dog largely, and substituted the same quantity of water, at the temperature of 85°, so as to leave the original quantity of the circulating fluid the same though changed in its nature. A given quantity of a solution of nux vomica was then introduced into the pleura, and the phenomenon of absorption was as rapid as if no change in the blood had taken place.

It follows, therefore, says Dr. Magendie, that absorption must be wholly influenced by the caliber of the blood vessels.

The further pursuit of these researches led him to the conclusion, that absorption is nothing more than the well-known phenomenon of *capillary attraction*, which takes place when tubes of a small caliber are immersed in fluids;—a phenomenon whose energy is in a direct ratio of the affinity of the fluid for the surface of the tube,—and in an inverse ratio with the diameter of the latter.

What takes place when we expose the extremity of a metallic, or a glass capillary tube, to the surface of a given fluid, is well known. Dr. Magendie employed portions of veins and arteries taken from dogs, and dead human subjects, to produce the same effect, and in this he perfectly succeeded.

The following experiment is intended to prove, that the same phenomenon takes place during life, which has been mentioned to occur after death; and that the parietes of the larger vessels are equally affected under both those circumstances;—

"Je pris un jeune chien d'environ six semaines; à cet age, les parois vasculaires sont minces, et par suite plus propres à la réussite de l'expérience. Je mis à découvert l'une des veines jugulaires, je l'isolai parfaitement dans toute sa longueur, je la dépouillai avec soin de ce qui la revêtait, et surtout du tissu cellulaire et de quelques petits vaisseaux qui s'y ramifiaient: je la plaçai sur une carte, afin qu'elle n'eût aucun contact avec les parties environnantes. Alors je laissai tomber à sa surface, et vis-à-vis le milieu de la carte, une dissolution aqueuse, épaisse, d'extrait alçoholique de noix vomique, substance dont l'action est très-énergique sur les chiens; j'eus soin qu'aucune parcelle de poison ne put toucher autre chose que la veine et la carte, et que le cours du sang fut libre à l'intérieur du vaisseau: avant la quatrième minute les effets que j'attendais se développèrent d'abord faibles, mais ensuite avec assez d'activité pour que je dusse m'opposer â la mort de l'animal par l'insufflation pulmonaire."

The same result followed a similar experiment, made upon arteries; and a third experiment demonstrated, that the smaller vessels were possessed of the same faculty.

"Je pris le cœur d'un chien mort depuis la veille; je poussai dans une des artères coronaires de l'eau à 30° centig. Cette eau revint facilement, par la veine coronaire, jusque dans l'oreillette droite d'oú elle s'écoulait dans un vase. Je fis verser dans le péricarde une demi-once d'eau légèrement acide. D'abord l'eau injectée ne donna aucun signe d'acidité; mais il suffit de cinq à six minutes pour qu'elle en présentât des traces non équivoques. Le fait était donc évident pour les petits vaisseaux morts; quant aux petits vaisseaux vivans, je n'avais pas besoin de recourir à de nouveaux essais, ni de sacrifier de nouveaux animaux. Les experiences que j'ai consignées dans mon mémoire sur *les organes de l'absorption dans les mammifères*, ne laissent aucun doute à cet égard, d'après le jugement de l'Académie elle-même."

The physiological conclusions from these facts, are given in the following words:—

"Il me parait donc hors de doute que tous les vaisseaux sanguins, artériels et veineux, morts ou vivans, gros ou petits, présentent, dans leurs parois, une propriété physique propre à rendre parfaitement raison des principaux phénomênes de l'absorption. Affirmer que cette propriété est la seule qui les produise, ce serait aller au delà de ce que commande une saine logique; mais du moins, dans l'état présent des faits, je n'en connais point qui infirme cette explication: ils viennent tous, au contraire, se ranger d'eux-mêmes autour de ce fait principal."

The practical applications which may be made of these conclusions, if they be admitted as correct, are numerous. We can now explain, in a more satisfactory manner, the cure of certain diseases; and will probably direct our attention to the mechanism of absorption in their treatment. For even in one only of the facts which Dr. Magendie's experiments go to prove, namely, that the more distended the blood vessels, the less active will be the absorption,—a fertile source is laid open for numerous curative indications.

ART. III. *Note sur un nouvel, &c.—On a New Mode of Preparing the Extract of Opium.* By M. ROBIQUET, Professor at the School of Pharmacy, in Paris.

The nauseating principle of opium, says the author, has but a small share in the effects which that substance produces on the animal economy. It is now a well established fact, that those effects are the result of properties peculiar to the two principles recently discovered in opium, the "narcotine" and the "morphine."

It results from Dr. Magendie's experiments, that the former acts on the animal system as a stimulant, or rather as an irritating substance; while the latter is the real anodyne, and that which induces calm sleep. The presence of two such opposite principles in opium, is, by Dr. Magendie considered as the cause of the variable effects which that drug is known often to produce.

The "narcotine" is the salt which Derosne discovered some years ago, and which led to the subsequent and more recent detection of "morphium;" and if that principle be the obnoxious one, which it is desirable to separate from the common extract of opium, any method of accomplishing that object in an effectual manner, will be received with gratitude. This method M. Robiquet has the merit of suggesting.

"Make a solution of opium in cold water, in the same way as if the aqueous extract were to be prepared. Filter and evaporate to the consistence of a thick syrup, which is to be treated in appropriate vessels, by rectified æther, taking care to shake the mixture repeatedly before decanting the æthereal tincture. The latter is then distilled, to separate the æther, and the operation repeated by adding fresh æther, and re-distilling as long as any crystals of 'narcotine' are obtained by the distillation. The solution of opium is then evaporated to the consistence of extract, which is preserved for use.

ART. V. *Experience sur la rage.* BY F. MAGENDIE.

This short paper is full of interesting matter. In opposition to the numerous contrary assertions, Dr. Magendie contends, that none of the substances hitherto recommended as remedies against hydrophobia, and introduced into the stomach, can exert the smallest influence on that disease. He grounds his opinion upon several experiments made by himself and others, in which some of the strongest narcotics, short of the *pure* prussic acid, have been not only introduced into the stomach, but thrown into the vortex of circulation, by injection through the veins, without any apparent salutary, or even calming effect. The author succeeded, in conjunction with Dupuytren, in injecting into the jugular vein of a young man attacked with hydrophobia, eight grains of the aqueous extract of opium, without any apparent result. Hydrophobic dogs have been known to admit the introduction even of the medicinal prussic acid, without any symptom of diminution in the disease. Must we, then, renounce altogether, to the possibility of curing this terrific malady? The result of the following experiment would seem to warrant a different conclusion. A dog, which exhibited the most violent symptoms of rage, was put at the disposal of Dr. Magendie, by its master. The Professor, with the assistance of some resolute pupils succeeded, with great personal risk, in securing and muzzling the animal. He then took 16 ounces of blood from the left jugular vein, and substituted to it 60 ounces of water at 85°. During the progress of the injection, 10 or 12 ounces more of blood mixed with water, escaped from the superior opening of the vein. After the operation, the animal appeared perfectly calm, laid itself down, as if to sleep, and, in about five hours, died; having, during the whole of that period, remained in the most tranquil state. On examining it after death, no lesion of the encephalic system could be traced; nor any sign of disease in the digestive organs. The salivary glands were larger than usual, and of a red colour. The pulmonic texture was completely filled with aqueous blood; the trachea and bronchia were full of a brownish froth, and their mucous membrane was inflamed.

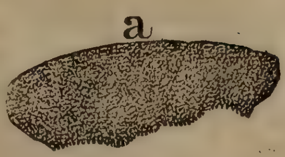
In the course of this paper, the author states, in a note, that he and Dr. Breschet inoculated a dog, with the saliva of the young man ill with hydrophobia, of whom mention has been made above, and that the animal became enraged in about a month. Two other dogs, that were bitten by the former, became likewise hydrophobic; but on the latter attacking other dogs, no morbid effects ensued. The action of the hydrophobic poison, therefore, seemed completely annihilated at the third generation.

ART. XI. *Memoir on the Structure of the Lungs in Man, and on the Modifications which that Structure undergoes at different periods of life; with some Remarks on the Origin of Pulmonary Consumption.* By F. MAGENDIE.

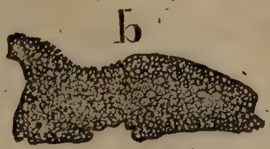
THIS paper deserves the immediate attention of the profession, from the importance of its ultimate object; but we have only room for a detail of that part of it, which relates to the mechanical structure of the lungs.

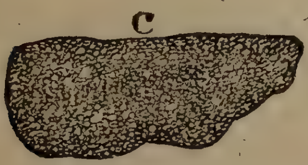
With a view to obtain an accurate knowledge of the texture of the lungs, Dr. M. partially fills them by insufflation with air, after their removal from the dead subject, and in that state, allows them to dry, either before the fire, or in the open air. When quite dry, this sort of preparation is nearly transparent. and may be readily cut into thin laminæ or slices, with a very sharp knife. If one of these laminæ be placed between the observer and the flame of a candle, or the light of day, the pulmonary cellules will be easily perceived. These cellules do not appear to be arranged in any methodical manner—nor to have membraneous parietes. They seem solely formed by the minutest and last ramifications of the pulmonary artery,—the *radiculæ* of the veins of the same name, which are a continuation of the former—and lastly, by the numerous anastomoses of all these vessels. These cellules are separated into many distinct lobules, in each of which, the cellules communicate among themselves; while between the lobules there is no sort of communication.

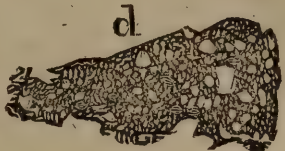
The number of cellules is in an inverse ratio to the age of the subject; consequently, the older the person, the larger is each cellula, or what comes to the same thing, the fewer are the cellulæ, The diagram (a) inserted in the margin, is intended to represent a *lamina* of the lungs of a child, eight days old, prepared in the manner above mentioned, and placed between the eye and the light;



The next marked (b) is a just representation of a similar *lamina* of the lungs of an individual, aged twenty-two years;







While (c) and (d) offer correct representations of *laminæ* of the lungs of individuals at the respective ages of fifty five and seventy years.

The diagrams will present a better delineation of the number, arrangement, and outline of the cellulæ, if seen through a magnifying glass.

It follows, therefore, that the lungs become superficially lighter as we advance in life; and in support of the correctness of this inference, Dr. Magendie states that he found, by actual experiment, that, under equal volumes, a portion of the lungs of a man at seventy was fourteen times specifically lighter than that of a child a few days old.

We have no room for inserting the practical remarks which actually suggest themselves, on the perusal of the preceding important observations.

Art. XIII. *Recherches Anatomiques, &c.—Anatomico-Chemical Observations on a Case of Chronic Hydrocephalus.* By G. Breschet, chef des travaux anatomiques, &c.

Every information from the hands of Dr. Breschet is valuable, and merits attention. There is not, perhaps, a more indefatigable, nor a more scientific anatomist among the rising generation of philosophical inquirers; and the place he fills at the Faculty of Medicine in Paris, with so much credit to himself, and advantage to his pupils, affords him many opportunities for the improvement of pathological knowledge.

In the presentinstance, Dr. B. gives the result of his examination of a subject, seven years of age, who died in one of the wards of the "Clinique Interne," from the disease mentioned in the title.

We can only extract the following few leading facts. The head measured 31 cent: in circumference—19 cent: from the root of the nose to the external occipital protuberance—and the same from the centre of one parietal bone to that of the other. The cranium was ossified, except at the anterior fontanelle, which was 7 cent: wide, and 3 cent: long. The cerebral substance was in contact with the cranium, and offered no trace of convolutions. The distension of the anterior lobes was very considerable. The lateral and third ventricles contained 3lb. of water. Their internal surface was smooth, and exhibited several blood vessels diverging from the corpora striata to the anterior part of the hemispheres. The cerebral mass altogether weighed 3½lb. while in another child of the same age, it was found to weigh about 3lb.

The fluid was clear and limpid, and consisted of

Water	990.
Albumine	001.5
Matter like Osmazome	000.5
Hydrochlorate of Soda	006.5
Phosphate of Soda	000.5
Carbonate of Soda	000.1

We have had occasion to examine, some months back, at the request of Mr. Sewell, assistant Professor at the Veterinary College, a child who died, the evening before, of a complaint similar to that described by Dr. Breschet. The summary appearances in this case, were as follows: Horizontal circumference of the head, in its widest part, 26 inches. Parietal diameter, 9 inches: Occipito-frontal diameter, 13¾: Distance from the root of the nose to the external occipital protuberance, measured by a line passing along the vertex of the head, 20½ inches. The bones were perfectly ossified, excepting at the anterior fontanelle, which presented a distance between the parietal bones of one inch and three quarters in length, and $\frac{11}{10}$ of an inch in width. The fluid contained within the ventricles weighed 72 ounces, it was transparent, colourless, and unmixed with any floating coagula, or concrete fragments of lymph. The cerebral mass being detached from the cranium, and emptied of its fluid contents, weighed 52 ounces; but having been immersed in a strong solution of oxymuriate of mercury for upwards of nine months, at the end of which time a total evaporation of the solution had been suffered to take place, by exposing the vessel to the open air,—the mass became contracted and perfectly hard, having preserved its external characters, and the original form of its outlines, although on a much more diminished scale, the whole of it barely weighing eight ounces. The few superficial experiments we made with the fluid contained in the ventricles, enabled us to ascertain that it had no smell, that neither lithmus nor turmeric paper announced the presence of either free acid or alcali, that its specific gravity was to that of water :: 1.0081: 1.—that it did not coagulate by heat, but that on the application of Berzelius' test, it gave signs of a minute quantity of albumine. The residue, after evaporation, was burnt, and gave out ammonia, carbonic acid gas, &c. On adding distilled water, and treating it with nitrate of silver, a copious white and solid precipitate, soluble in ammonia, was obtained.

We beg leave to throw out a hint to Dr. Breschet, and the other anatomists who may have opportunities of witnessing cases of hydrocephalus internus like those described in the present article,—whether the disease be not greatly influenced, if not altogether induced, by an unnatural disposition of the internal carotid, which in two other cases examined by us, was found to be considerably shorter than usual, and almost wholly without any of those violent contortions which are commonly observed in that artery before it enters the skull. We can easily conceive, that, under such a disposition of the principal blood vessels supplying the brain, the *quantum* of blood entering that organ, at a given time, as well as its *momentum*, must need be much more considerable than where the wise disposition of nature obtains, as in the majority of cases, of checking the torrent of the circulation towards an organ of so delicate a texture, by forcing it to travel through an extended channel, rendered more intricate by the number of its contortions.

History and Method of Cure of the various Species of Palsy; being the first part of the second volume of a Treatise on Nervous Diseases. By JOHN COOKE, M. D. F. A. S. Fellow of the Royal College of Physicians, and late Physician to the London Hospital. Octavo, pp. 215. London, 1821.

(From the Medico-Chirurgical Review for March, 1821.)

ERUDITION and talent, when confined to the individual, are nearly as useless to the community at large, as though they did not exist. They are like a river that takes a subterraneous course, and is known only to its own dark and solitary channels. But when they are made subservient to the general diffusion of knowledge, through the medium of the press, they are like a river winding beneath a fervid sun, through a thirsty country, whose branches irrigate the surrounding plains, permeate the arid soil, and scatter fertility over the face of nature. There is, moreover, in the intellectual, as well as in the physical world, a moral obligation imposed on the favoured few, to extend a portion of the fruits of their endowments and acquirements to the indigent many—an extension which, in the medical profession particularly, is productive of the most beneficial consequences, not only to the profession itself, but to society at large.

The annals of medicine, ancient and modern, pregnant as they are with the most valuable information, are yet, from their vast extent, and the languages in which they are recorded, almost completely inaccessible to nine-tenths of medical practitioners. Hence it is, that the great mass of medical society enter on the actual duties of their profession with but a scanty stock of medical lore—namely, that which they have hastily noted down in the lecture room—picked up during the hurried movements of hospital practice—or purchased, on leaving the seats of education, in the shape of a few STOCK BOOKS, as they are not inaptly termed by the bibliopolists.

Now we are far from censuring this state of things, for really we know not how it can be otherwise under existing circumstances. But we are clearly of opinion, that the man who, selecting some important class of diseases, lays open to us the stores of information, ancient and modern, collected or recorded on that particular subject—and that in a form and language accessible to all ranks of the profession, performs a great service to the rising generation—aye, and to no small portion of those who consider themselves *melioris notæ* in the republic of medicine. This is the task which Dr. Cooke has undertaken, and his qualifications to execute it are acknowledged by all. His object appears to have been, to extract useful matter on the subject of which he treats, from all the authors of reputation, of whatever age or country, and thus to communicate their sentiments in plain and perspicuous language. In the present publication our learned author has clothed the matter more in his own words, than in the former volume; and by so doing, he has endeavoured, in several instances, and that with success, to render diffuse passages succinct, and obscure parts of the subject more intelligible. Although Dr. Cooke's work is professedly a compilation, yet he has, on almost all occasions, as we shall show in the sequel, introduced his own opinions and experience; and where he has not presumed to decide between jarring doctrines and modes of treatment, he has almost uniformly stated what he himself would be inclined to adopt or pursue, in such circumstances. The utility of this proceeding is so obvious, that it is quite unnecessary for us to dilate upon it. The original communications which our author has received from his friends, particularly Dr. Philip, Mr. Charles Bell, Mr. Cooper, and others, must necessarily enhance the value of the publication; and with these few preliminary remarks, we shall proceed to lay before our readers a brief analytical sketch of the work itself, which we doubt not will substantiate the justness of the preceding observations, and induce our readers to cultivate a much closer acquaintance with the original.

This *first* part of Dr. Cooke's second volume contains seven chapters and an appendix, viz. on the general *history* of palsy, hemiplegia, paraplegia, and paralysis partialis—on the *causes* of palsy—diagnosis and prognosis—and on the *treatment* of the disease. The appendix consists of an abstract from the minutes of the Army Medical Board, and an official return of cases of paralysis and apoplexy in the British forces, during a period of six months.

It is not a very easy task to present a connected view of so great a mass of excerpted opinions and observations, especially as the author has rendered the language terse and condensed by the method which he has adopted. Yet as many hundreds of our readers can never have access to the original, we shall endeavour to run a slender *line* of analytical delineation parallel with the great *chain* of the work itself, by which means a degree of communication between its parts may be preserved, and an *ex pede herculem* sample of the publication exhibited.

After detailing the *definitions* of ancient and modern authors, Dr. Cooke thinks, and we believe justly, that the following sentence may comprehend the chief characteristics of palsy.

> "It is a disease in which there is a diminution, or an entire loss of the power of voluntary motion, or of sensation, or of both, in some particular part or parts of the body, without coma." P. 3.

Our author remarks that he has generally found the precursors of palsy to be the same as of apoplexy; namely, vertigo, drowsiness, partial head-ache, numbness or torpor, loss of memory;—and more especially as forerunners of *palsy*, he has observed "a faltering inarticulate voice, drowsiness, a slight delirium, dimness of sight, or double vision, trembling, a numbness gradually ascending to the head, frequent yawning, weakness, distortion of the mouth, and disposition to faint."

> "Palsy chiefly consists in the loss of the power of voluntary motion; for sensation in a greater or less degree generally remains; nay, in certain cases, it is morbidly increased. I have seen several instances in which paralytic persons have felt very violent pain in the parts affected, particularly in the shoulder and arm. These remarks might be confirmed by quotations from various authors.—I never saw a case of palsy in which sensation was entirely lost; and an eminent physician of great experience asserts that a total loss of feeling in this disease is extremely rare." 5.

The vital and natural functions are generally but little affected in palsy. The opinion is very commonly received that the temperature of paralytic parts is below that of health. Dr. Abercrombie is of different sentiments. He thinks, that the power of preserving a medium temperature is partially lost by paralytic limbs, so that they are more heated when exposed to heat, and more chilled when exposed to cold, than parts in a state of health. He illustrates this by the following fact:—

> "A medical gentleman, on visiting a paralytic patient, was astonished to find the paralytic arm so intensely hot that he could not touch it. He was at first very much surprised; but found, upon inquiry, that the patient had, by the advice of a friend, applied to the arm a quantity of very hot bran, or something of that kind very hot, which had been removed a short time before his visit." 8.

Dr. Cooke remarks, that if this were generally the case, the temperature of paralytic parts ought to be always less than that of other parts, in these climates where the medium temperature of the air is far below human heat. Paralytic limbs often grow more soft and flaccid than natural, as well as wasted, and sometimes œdematous. Mr. Charles Bell informs our author that he has observed the nerves themselves, in such cases, lose much of their substance.

In this unhappy class of complaints, the energies of the mind are often much weakened—the memory especially, is much impaired—sometimes partially so; curious examples of which are quoted from Galen and others.

> "The passions of the mind are sometimes greatly affected by palsy. Persons naturally mild and placid, have become peevish and irritable under its influence; and sometimes a change of an opposite nature has been caused by it. I had several years ago an opportunity of seeing an illustration of this remark, in the case of a much respected friend. The person to whom I allude, had always up to an advanced age, shown an irascible and irritable disposition; but after an attack of palsy, his temper became perfectly placid, nnd remaiued so till his death, about two years afterwards." 12.

In persons recovering from palsy, Dr. Cooke has often observed, that the parts most distant from the head are first restored. In hemiplegia it almost always happens that the leg recovers its power long before the arm. Our author adopts Dr. Cullen's nosological division of the disease into hemiplegia, paraplegia, and partialis.

I. *History of Hemiplegia.* This term does not occur in the writings of Hippocrates, Galen, or Aretæus. Paulus Ægineta appears to have been the first to designate this species of palsy. It is preceded, in a great proportion of cases, by apoplexy, but sometimes so slight as to escape notice. Dr. Cooke here brings forward a great number of hemiplegiac anomalies, if he may use the term, as well calculated to illustrate the history and nature of the diease. For these we must refer our readers to the work itself, from page 18 to 32.

> "Hemiplegia sometimes terminates in a few days, but much more frequently the progress towards recovery is very slow. It often happens that an amendment to a considerable degree takes place, and then the disease remains stationary for months, or even for years: thus we frequently see persons, who have been attacked by hemiplegia, so far recovered as to be able to walk in an imperfect manner, one leg being dragged, with the foot turned out, without making any material further progress towards the healthy state." 33.

In some cases, however, the patient makes no improvement, is confined to bed, and dies gradually exhausted—"raro ad sanitatem superveniunt, et plerumque miserum spiritum trahunt, memoria quoque amissa." *Celsus.* The most distressing state, as Dr. Heberden observes, of this disorder, is that in which the powers of the mind are in the highest degree debilitated; and the passions become ungovernable, leading almost to madness, so that a person survives himself, as it were, and is reduced to a state of the utmost misery, if conscious of it—being unable to stand, to speak, to feed himself, or to retain the fæces or urine, yet continuing thus to live, a burthen to himself and all his friends.

II. *Paraplegia.* In this species of palsy, the superior parts of the body are seldom affected, unless the causes are seated in the upper part of the spine. Galen appears to have been aware of this fact.

> " If the spinal marrow, he says, be affected about the fifth vertebra, the hands will be wholly deprived of sense and motion; if about the sixth, the paralytic affection of them will be more partial, &c. and if below the eighth, they will not be affected at all." 37.

The paraplegia depending upon a diseased state of the spine and its connexions, is by far the most frequent. It is produced sometimes by mechanical injuries; but more generally it takes place gradually and constitutionally, especially in children.

> " This disorder generally comes on slowly, and is preceded by languor, listlessness, and weakness in the knees. As it advances, a difficulty in properly directing the feet is experienced, and an involuntary crossing of the legs, with frequent tripping or stumbling are observable, and the legs or thighs are found to have lost a good deal of their sensibility, and to have become useless for the purposes of motion. When an adult is the patient, the progress of the distemper is much the same, but rather quicker." 39.

The paraplegia depending on an affection of the brain has been pointed out by Dr. Abercrombie, and more recently by Dr. Baillie, as we showed in our last number. Dr. Cooke has seen some cases where paralytic affections of the arms were occasioned by some complaint in the head; but does not recollect to have seen, in an adult, a loss of power in the lower extremities from that cause, and marked by the train of symptoms described by Dr. Baillie, whose accuracy of observation, however, is unquestionable. The anomalies of this species are very few, and only one is introduced, communicated by Dr. Hutchinson: but dissection not being allowed, the case is imperfect.

III. *Paralysis Partialis* is that species which affects less than half the body—or some one particular part or organ. They may be considered as consisting in a want of sensation or of motion. Examples of the *first* we see in paralytic affections of the olfactory nerves, retina, gustatory nerves, auditory nerves, and nerves of touch:—of the *second*, in want of motion in the eye-lids, muscles of deglutition, organs of speech, urinary bladder, or in particular parts from the effects of lead. The vital organs are rarely affected in this way, being carefully guarded against such accidents, not only by the situation of the nerves of these organs, but by their own inherent powers.

After enumerating and exemplifying the various kinds of partial palsy, Dr. Cooke briefly notices the question often agitated by physiologists, how it happens that *motion* is sometimes lost, while *sensation* remains, and *vice versá*, if both functions are performed by the same nerve? The question puzzled Galen, as it had done Erasistratus and Herophilus long before him. It has since puzzled Forestus, Haller, Van Swieten, Sauvages, &c. Recent physiologists seem to have abandoned the hope of a solution. We shall introduce, however, the sentiments of two living authors of the present day.

"Dr. Wilson Philip, in compliance with my request, has given me his opinion upon it. Dr. Philip, who has carefully studied the nervous system, says, 'I think we must admit that the bundles of nerves, going directly from the brain or spinal marrow to any part of the body, contain nerves of two descriptions, one set adapted to convey the dictates of the will, the other to convey impressions from the part to the sensorium. This I think more probable, than that impressions move backwards and forwards in actually the same channels: one of these opinions must be correct. If the former is so, there is no difficulty in accounting for the feeling being lost, and the power of motion remaining, and *vice versâ*. Indeed these phenomena of disease seem to me to go some way towards proving the former opinion. These observations may perhaps be applied to all nerves; but in other respects the ganglion nerves seem to obey laws very different from those which come directly from the brain and spinal marrow.'"

"Mr. Charles Bell, whose physiological opinions deserve great attention, has also, in compliance with my desire, favoured me with his sentiments on this question. 'The nerves of sensation and motion,' he says, 'are bound together in the same membranes, for the convenience of distribution; but there is reason to conclude that they are distinct through their whole course, and as distinct in their origin in the brain, as in their final distribution to the skin and muscles; why then should we suppose that they are similarly affected in diseases of the brain. Even nerves of the same class, viz. the nerves of voluntary motion, are not affected in the same degree by disorder of the brain. When there is effusion upon the membranes of the brain, from excessive inebriety, or dropsical effusion of any kind, the muscles are influenced unequally; and it is remarkable that those muscles, and consequently those nerves, which are immediately under the influence of the will, are first affected or debilitated in the greatest degree, where there is a general disturbance of the brain. The slighter disorders affect the muscles of the eyes; in a greater degree, we shall see palsy of the face; in a still greater degree, we find the muscles of the limbs unequal to their office. The muscles of respiration are next affected; and the fibres of the hollow viscera retain their office whilst there is life. If nerves of voluntary motion are thus differently affected according to the distinction of their functions, we need not be surprised that nerves, in all respects so distinct as those of motion and sensation, should be differently affected by what appears to us a general and uniform affection of the brain." 58.

Dr. Cooke justly remarks upon these opinions that, until we can demonstrate the distinction between the nerves of sense and nerves of motion (excepting in the eye and tongue where the distinction is evident) the question must be considered as involved in great obscurity, although the analogies abovementioned are certainly greatly in favour of different sets of nerves for the two different functions.*

IV. *Etiology*. Some of the principal *predisposing* causes of palsy must be the same as those of apoplexy, enumerated and explained in Dr. Cooke's first volume, and treated of in this Series, *No.* I. *p.* 4 *et seq.* and the same may be said of the *exciting* causes. With the exception of paraplegia, paralytic affections, in general, occur in advanced age, especially in constitutions weakened by disease. Dr. Gordon's report from the Army Medical Board states, the chief exciting cause of apoplexy and palsy among the military to be, intoxication, exposure to the sun, drinking cold water, and bathing in the same—and that a predisposition to the disease is laid by long continued attacks of fever, visceral diseases, epilepsy, and dysentery. The hemiplegic form being almost invariably preceded by an apoplectic fit, of greater or less duration or violence, "the causes, therefore, of both are the same."

Dr. Cooke details at considerable length the experiments of Dr. Serres, of whose pathological researches we gave a full account in our eclectic article on apoplexy. Of the *experiments*, however, we did not give an account, because we did not deem them quite conclusive, and we are glad to see that Dr. C. appears of a similar way of thinking. Indeed, he introduces a series of observations on this subject, which we are tempted to extract rather than abbreviate.

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* May not the function of a nerve depend upon the peculiarity of its structure where it *terminates* in an organ; as in the liver, where it regulates the secretion of bile; in the pancreas, the pancreatic secretion; in the kidney, the urine, &c. We can discover no difference of structure in nerves going to different organs: one nerve sometimes distributing branches to organs of very different function. May not therefore the arrangement of the nervous filaments in the skin and other sensible parts, be peculiarly adapted for the function of sensation, without supposing the necessity of two different sets—one for motion, the other for feeling?—*Rev.*

" The observations of M. Serres, and the facts which he has adduced, are highly worthy of our attention; and great credit ought to be given to him for his diligence in improving the peculiar opportunities for information which he enjoyed; but I think the conclusions which he has drawn from his reasoning are too general, and by no means strictly logical. He states, that he has, in many instances, thrown blood upon, and into the meninges, the cavities, and the substance of the brain, without producing apoplexy, or even somnolency; that upon the examination of a very great number of persons after death from apoplexy, he has found the meninges bearing evident marks of irritation (inflammation), accompanied with effusions of various kinds, and in various situations within the cranium; that sometimes he has observed the brain itself to have been injured in its substance, but without effusion: that in the former cases he has ascertained the preceding apoplexy to have been simple; and in the latter combined with palsy; and that he has known many cases of apoplexy without effusion, and of effusion without apoplexy; and hence he concludes that he has overturned the doctrine of apoplexy and palsy from pressure, and has established a better system respecting the distinctions and nature of the diseases, than any hitherto presented to the world: but the accuracy of one of these conclusions, at least, may, I think, be reasonably doubted.

" If M. Serres chooses to denominate those apoplexies *meningeal* in which the meninges appear to have been diseased, accompanied with effusion, the brain being in a sound state; and those *cerebral* in which there is no effusion, but the brain itself is disordered; if M. Serres chooses to make this division of the disease, I see no objection: perheps it is better than that of sanguineous and serous. But, though physiologists may approve of his distinctions, I much doubt whether they will be disposed to admit that he has overturned the doctrine of apoplexy and palsy from pressure.

" He has shown that blood has been effused in various situations within the cranium, without apoplexy; but he cannot hence fairly conclude that effusion never produces the disease. Since he admits that there is effusion in the meningeal apoplexy, how can he prove even allowing it to be the consequence of what he calls irritation of the meninges, that the irritation, and not the effusion, is the immediate exciting cause of the disease! If compression by fluids were the cause of apoplexy, M. Serres says there could be no apoplexy without effusion; but the want of logical precision here is evident, unless we grant, what I believe few physiologists would admit, that compression from fluids is the *only* cause of the disease. That some degree of pressure may be made on the brain without producing either coma or apoplexy, may be conceded as proved by M. Serres' experiment; but it by no means follows that a different or greater pressure would not produce these diseases; indeed, both observation and experiment decidedly show, that compression does sometimes, according to its degree, give occasion, first to somnolency, and then to complete apoplexy. It is a fact perfectly well known, that after the operation of the trepan, pressure on the part deprived of cranium produces these effects: and innumerable instances might be adduced in which compression by depressed bone after accidents, has given occasion to coma and apoplexy.

"These observations are confirmed by direct experiments, which lead to positive conclusions; not to negative conclusions, like those of M. Serres. M. Portal trepanned the cranium of a dog; he compressed the dura mater and the brain, sometimes with his fingers, and sometimes with a bouchon of linen or of wood, and sometimes by water or mercury poured through the cavity made in the cranium. A funnel was adapted to the opening of the cranium, which was filled with water or mercury; so as to produce a graduated compression, more or less strong, upon the brain. In whatever way the experiment was made, it instantly produced the following effects—The animal ceased to bark; if the compression was increased, it became agitated by strong convulsions; if still further increased, a profound sleep took place, the convulsions ceased and the respiration became stertorous. If the pressure was diminished, the breathing became more free, and the convulsions returned. This experiment was very often repeated by M. Portal, and always with the same results, except where the compression of the brain had been so strong, that its substance had been weighed down, *affaissée*.*

"Mr. Astley Cooper has been kind enough to give me an account of an experiment which he made upon a dog, with a view to ascertain what degree of pressure the brain could bear; which in part confirms M. Portal's experiment. He trepanned a dog, and detached the dura mater in a circle from the inner table of the skull, to the extent of half an inch. He then pressed upon the dura mater, so as to depress it about the fourth part of an inch, and the dog exhibited no signs of uneasiness He then pressed upon it half an inch of depression, and the animal showed great signs of uneasiness, endeavouring to escape from his grasp with all his efforts: he then pressed to three quarters of an inch, and the animal became torpid, breathed laboriously, and according to the declaration of Mr.

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* Portal, Cours de Physiologie Experimental, p. 248.

Davie, who assisted him in the experiment, the pulse became slow and irregular. Suddenly he removed the pressure, and in half a minute the animal started from the table, turned several times round, as if giddy, and then staggered away." 88.

Keeping these observations in view, our very able author properly asks if, in a case of apoplexy, preceded by the usual symptoms, we should find *post mortem*, a quantity of blood effused, without any other disease, (many instances of which are on record) would it not be reasonable to conclude that the effused blood first produced vertigo or somnolency, and afterwards, by its increase, a complete fit of apoplexy?—We would answer, yes. Our author thinks, perhaps justly too, (although against our own creed) that we err both in attributing apoplexy *always* and *never* to pressure, as physiologists of opposite systems have done. Dr. Cooke has no doubt, however, "that in the generality of cases, apoplexy is produced by general, and palsy by partial compression. In this sentiment we fully coincide.

From hemiplegia, our author comes to paraplegia, and partial palsy. Paraplegia, he observes, in a great proportion of cases, is produced by morbid affections of the spine and its connexions, coming on slowly, and depending upon a constitutional disease. The cause is also sometimes seated in the head, as shewn by Dr. Baillie, Dr. Abercrombie, and others.

> "A diseased state of the spine, and its connections, commonly produces paralytic affections of the lower extremities; but if the injury be in the lower parts of the vertebral column, the muscles of the superior extremities sometimes are also affected, and even general palsy may be thus produced." 93.

The causes of partial palsies are numerous and various—sometimes seated in the head—sometimes the spine—sometimes, and Dr. C. thinks most frequently, in the nerves themselves. This disease occasionally depends on inflammatory action in the brain, or in the paralized parts, often accompanied with pain. The two following cases communicated by Dr. Abercrombie and Mr. Charles Bell, we shall insert here.

> "Dr. Abercrombie, in his communication to me, describe as case of much paralytic disease from a circumscribed morbid cause in the head. 'A gentleman aged thirty-three was seized with numbness and slight palsy of the left side, the numbness affecting also the left side of the face, the line being drawn with the utmost

precision along the centre of the nose. He had no head-ach, and the pulse was natural. He was largely bled, and the affection went off in a few days; but from this time he was observed to be less acute in business, his memory was impaired, and he sometimes complained of his head. After three months he was observed one day more confused and forgetful than usual, and in the night was seized with perfect apoplexy, which was fatal in twenty hours. On dissection every part of the brain was found in the most healthy state, exept that in the centre of the right corpus striatum there was an abscess regularly and nicely defined, no bigger than would have contained a small pea. In the lower part of the left corpus striatum there was a more regular suppuration of great fætor extending over a space about the size of a small bean. There was no serous effusion, and no other morbid appearance of any kind.

" Mr. C. Bell has described to me a case of partial palsy, with great debility, preceded by inflammation of a nerve, accompanied with excruciating pain. In this instance the inflammation was in the ulnar and fibular nerve, and the pain, which was of the most agonizing kind, had confined the patient for two years, and had quite subdued a powerful frame. He had in vain sought relief, says Mr. Bell, from some of our most distinguished friends, and he was left in a state of despair. Observing that the pain was confined to certain parts of the hands and feet, and that a distinct class of muscles were become paralytic and shrunk, Mr. Bell's attention was directed to the corresponding nerves, and he found them tender and acutely sensible to the slightest pressure. The accessions of pain were periodical and alternating, the feet being generally first attacked, and afterwards the hands. By repeated purging, and the application of leeches along the course of the nerves, together with other remedies to be described when I speak of the treatment of partial palsy, this patient was restored to health." 98.

Mr. Bell includes among the causes of partial palsy, long-continued exercise of particular muscles, or violence done to them—also irritation in the bowels, especially among the children of the poor. We saw a few years ago, an officer of rank, who always lost the power of speech, and sometimes of sight, whenever the gastric, biliary, and intestinal secretions were much disordered. We have repeatedly seen him become speechless in the middle of his dinner, when he could only make signs to his surgeon, who, on those occasions, gave him what this officer used afterwards facetiously to call the "doctor's thunderbolts," namely brisk purgative pills of calomel and extract of colocynth, which invariably dissipated the paralytic affection, as soon as they began to operate.

Here our author notices the fumes or effluvia of metals, particularly lead, as well known causes of partial paralysis. Dr. Cooke was lately consulted by a gentleman who had a paralytic affection of one side of the face, without any assignable cause. On inquiry, however, it was found that he had slept two or three nights in a room where the bed was placed near a closet, the door of which had been recently painted, what is called a dead white. The external application of lead even in its metallic form, has occasioned palsy.

> " A person a few years ago was admitted into St. Bartholomew's Hospital, under the care of Dr. Powell, who was affected with palsy from this cause in a very extraordinary degree. The patient, who was a painter was totally regardless of cleanliness in his business, and was in the habit of wiping his brush on the sleeves of his coat, so that he was particularly exposed to the fumes of the paint which he used. In this case, not only the hands of the patient were paralytic, but also the lower extremities, and the sphincter muscles of the bladder, so that he could not retain his urine." 104.

We must here pass over a great deal respecting the etiology of the disease under consideration, and also much interesting matter collected from various quarters respecting that curious phenomenon in palsy, namely, the opposite sites of cause and effect—the one being almost invariably seated in the right side when the other is in the left, and *vice versá.* Of all the explanations hitherto given, that of the *decussation of nerves in the brain*, particularly in the tuber annulare, though not satisfactorily demonstrated, appears to our author to be the most probable.

V. *Dissections*, *Diagnosis*, *Prognosis*. The *Post mortem* appearances in palsy very much resemble those after apoplexy which have been described in Dr. Cooke's first volume, and also in the first No. of this series of our Journal. In this publication, however, Dr. Cooke has given a neat account of the pathological investigations of M. Serres, Riobe, Rochoux, and other late continental writers, with whom our readers are pretty familiar from the extracts we made in our article on apoplexy. The diagnosis, as our author remarks, is so clear that there can be no danger of confounding this disease with any other.

On the subject of PROGNOSIS there is much variety of opinion. The ancients, in general, considered palsies of long standing as incurable. Dr. Abercrombie, however, takes a more encouraging view of the subject, and thinks we have probably been too much in the habit of considering paralysis of long standing as depending on fixed and irremediable disease of the brain. Many cases, he observes, are on record, which lead to shake this opinion—some recovering very gradually, and, in a few weeks or months, leaving no trace of the disease. Dr. A. has not given us any marks by which we can discriminate these favourable from the more unfortunate cases. We fear that the following prognosis of our able author will prove too rigorously correct.

> "As far as my own experience enables me to judge, the prognosis in the general palsies, must be almost always unfavourable. I have seen many cases of recovery from palsy in a very considerable degree; but I do not recollect more than one, or two cases, of a complete restoration, both of sensation and motion, in the whole of the side of a person who had been affected with a perfect hemiplegia. When this species of palsy depends upon an injury done to one side of the brain, which is almost always the case, I am inclined to think that the mischief is seldom, if ever, entirely obliterated, and the disease wholly removed. On the dissection of persons after palsy, either evident disease is found in the brain or marks of the existence of former disease, which had given occasion to the complaint; and although Messrs Rochoux and Riobé have adduced good reasons for believing that fluids effused have been absorbed, and that cavities in the brain have been sometimes closed, yet the mischief may not have been completely removed, nor the brain perfectly restored to its healthy state; and whilst any morbid cause capable of producing palsy continues in any degree to exist, it is natural to imagine that palsy in some degree would remain. Reasoning from appearances after death from palsy, would lead us to conclude that the disease almost always, in a greater or less degree, does remain. Instances may, no doubt, be adduced of perfect recovery from palsy; but I am persuaded that such are of very rare occurrence. If persons affected with hemiplegia do not become apoplectic in a short time, it often happens, that after a certain degree of amelioration, the disease becomes stationary, or very gradually proceeds, even for several years, before it terminates fatally." 130.

VI. *Treatment.* Our author enters first on the treatment of *hemiplegia*, the most common and the most important species of the disease. This species, as was before observed, being, in a great proportion of cases, the consequence of apoplexy, the means both of prevention and cure, must be nearly the same in both:—indeed they differ chiefly in degree. We shall pass over the preventive measures whch are judiciously stated by Dr. Cooke at pages 131-2-3 of the work. On the actual accession of the disease, the measures must be nearly those employed in apoplectic seizures. Dr. Cullen was of opinion, that in hemiplegia of any standing there is probably either sanguineous or serous effusion. M. Serres almost always found a quantity of blood in cavities of the brain, produced by injuries done to that organ. Supposing then that pressure on the brain is the operating evil, the removal or diminution of that pressure is clearly our object,—and this can only be effectually attained by blood-letting, purgatives, emetics, diaphoretic sialagogues, revelents, and discharges by means of blisters, issues, and setons. The ancients prescribed general and local blood-letting in this disease; and the moderns, who recommend the same measure in apoplexy, prescibe it in paralysis, but with caution. Those who doubt the propriety of bleeding in apoplexy, proscribe it wholly in palsy. Mr. Hunter was of opinion that in hemiplegia we ought to extract blood very largely, especially from the temporal arteries; and Dr. Abercrombie has published some cases illustrative of the success of this practice. The following are the statements of our author himself on this subject; and they are delivered with the cautious decision which marks the scientific practitioner.

"My own experience on this subject is in favour of the practice of blood-letting in hemiplegia, when accompanied with strongly marked apoplectic predisposition; and I do not recollect to have observed any mischief produced by it under such circumstances. I once, indeed, saw this species of palsy terminate in a fatal apoplexy soon after a free evacuation of blood, in the case of a gentleman seventy years of age, of a plethoric constitution, and free mode of living; yet I am convinced that bleeding, all circumstances considered, was in this case highly proper; nay, it is not very improbable I think, that by a still more copious evacuation of blood, the total abolition of sensation and motion might have been prevented. We have some cases on record, in which hæmorrhage from the nose, or from the hæmorrhoidal or menstrual vessels, have relieved persons affected by paralytic symptoms, especially when connected with the stoppage of the piles or the menses. With respect to the treatment of hemiplegia, as far as relates to the propriety of blood-letting, and the extent to which depletion by that means may be safely carried, it appears to me extremely difficult, if not impossible, with propriety to lay down any absolute general rules. Each individual case must be viewed in all its circumstances, and by a careful consideration of them, our practice should be regulated. Before we prescribe blood-letting in hemiplegia, we must investigate the age, strength, general constitution, and habits of the patient, and above all, the actual symptoms of the disease. In early, or even in somewhat advanced life, if plethora and the various symptoms formerly enumerated as tending to apoplexy were present, I should not scruple to bleed freely, both generally and topically. On the contrary, in great age, debilitated, leucophlegmatic habit, dropsical tendency, &c. I should think it right to abstain altogether from this, and from every other powerful mode of depletion, unless there was an evident great determination of blood to the head, marked by flushing in the countenance, throbbing of the arteries, redness of the eyes, &c. In doubtful cases, indeed, the safest plan would be to evacuate blood only topically by leeches or cupping glasses, and to proceed as circumstances may direct, carefully watching from time to time the effects of the practice." 142.

There is much less caution necessary in the employment of purgatives in paralysis. "In all cases," says Dr. Cooke, "a free evacuation of the bowels is not only safe, but necessary." Boerhaave thought purgative medicines in certain cases, of more service than all others put together, provided the body could bear their power. Van Swieten and Forestus are of nearly similar sentiments. Indeed all writers agree, as to the propriety of keeping the body open in hemiplegia; but that the cathartics should be suited to the nature of the case.

"The neutral salts and other purgatives called refrigerants, may be given where there is much determination of blood to the head, and in full habits; but in debilitated, leucophlegmatic, and dropsical cases the more stimulating purgatives, such as aloes, calomel, scammony, colocynth, jalap, &c. may with more propriety be administered." 143.

Our continental brethren lay much stress on stimulating glysters; and emetics are prescribed with less scruple in palsy than in apoplexy by the practitioners of the present day—in France they are much employed. Dr. Cooke thinks, and we coincide with him, that in hemiplegia after apoplexy especially at the beginning and in plethoric habits, emetics are doubtful remedies; but not so purgatives. Of diaphoretics, diuretics, and sialagogues, our author's experience does not enable him to speak. Indeed they can be but of very subordinate efficacy. These observations are meant to apply, of course, to hemiplegia in its early state, and more especially in its connexion with apoplexy. But when the disease has subsided for a length of time, and the apoplectic symptoms have disappeared—when determination of blood to the head is no longer apparent--then the *methodus medendi* becomes considerably modified, and a stimulant class of remedies may be safely ventured on, though previously inadmissible. The chief external stimulants are frictions, blisters, sinapisms, fomentations, balnea calida, electricity, and galvanism. The internal are volatile salts, acrid vegetables, aromatics, essential oils, and resinous substances. The ancients, Dr. Cooke remarks, were much too free in the employment of stimulants in palsy, from always viewing the disease as one of debility, coldness, and obstruction. Dr. Cullen made some useful distinctions in this respect. The excitement of the passions has been resorted to, in former times, as a stimulant in palsy; and some curious instances of their efficacy are on record. But, as Dr. Cooke has justly observed, these instruments are not sufficiently under our control and management, ever to become of much practical advantage.

Of the external stimulants, our author has derived most benefit from friction by the hand or flesh-brush, which may be rendered more efficacious by stimulating liniments, as the fossil acids and volatile alkalies, combined with oil or lard—essential oils, &c. Blisters and sinapisms are very generally employed in palsy--yet they should be used with caution, when sensation and emotion are nearly extinguished.

> " Some practitioners are in the habit of applying blisters, or other stimulants to the head, immediately after the accession of hemiplegia; but I am of opinion, that we ought not to make such applications in plethoric constitutions, and especially when the disease is the consequence of apoplexy, till some blood has been taken away; and I think, that when such stimulants are used, they should be applied on that side of the head which is opposite to the paralytic side; because anatomists have ascertained, as above-mentioned, that in a very great proportion of instances, the cause of hemiplegia is seated in some part of the brain, opposite to the side affected." 150.

The thermal waters, especially those of Bath and Buxton, have been greatly extolled, and doubtless they have deserved, like most other remedies, a modicum of the praise lavished on them. Sudden *cold* applications have also had their partizans. Dr. Cooke is inclined to think most favourably, upon the whole, of the warm applications as most under our command. " If cold does not produce re-action; or if it give occasion to a very great re-action, it would probably do mischief." Electricity has been very generally employed in hemiplegia, especially on the Continent, and they say with success:—nevertheless, it seems, of late years, to have fallen into disrepute. There are many histories on record, where it has been unequivocally injurious. It is no doubt a powerful excitant of the nervous system. But what becomes of the vascular system the while. Is not paralysis very generally—indeed most commonly, the effect of pressure on the brain or spinal marrow: what success then are we to expect from electricity? We give our author's sentiments in his own words.

> "From my own observations of the effects of electricity in paralytic affections, I venture to recommend a trial of it under the circumstances, and with the cautions pointed out. I have in many cases seen it materially useful, and I do not recollect a single instance in which it appeared to do mischief. Although Dr. Cullen, as above-mentioned, places more dependence upon a repetition of electricity, than upon its force, I wish to observe that, from experience, it appears to me to be chiefly serviceable on its first application, and that its beneficial effects are by no means proportioned to the length of time of the employment of it. Dr. Franklin observed, 'that the paralytic persons whom he electrified were generally restored for a few days in the beginning, but that they afterwards either did not mend, or that they relapsed into their former state.'
>
> I saw, some years ago, a case of complete paraplegia, in which the good effects of electricity were at first extraordinarily great, but they were not permanent; for though the application of this power was for a considerable time continued, the patient experienced a diminution, rather than an increase, of sensation and motion, in the parts affected." 159.

Mr. Partington, whose experience is considerable, and on whose judgment we certainly should be much inclined to rely, considers electricity as superior to galvanism, especially in its application to the head and neighbouring parts.

The actual cautery is said to have been successfully employed by the Egyptians in apoplexy, palsy, and epilepsy; and the moxa is much used on the Continent. Internally, the rhus toxicodendron, nux vomica, horse-radish root, and the seeds of mustard, have been often administered, with various success.

Half a grain of the toxicodendron (powdered leaf) may be given thrice a day; and the quantity gradually increased to two, three, or four grains, watching carefully the effect. It commonly produces twitching or convulsive motion, or a sense of tingling or pricking in the paralytic part; and in these cases its efficacy is most conspicuous. Dr. Alderson of Hull, has published several striking cases of the utility of this remedy in paralysis which afford encouragement, if there be any faith in medicine, to a further trial of it in those cases where the employment of stimulants is not contra-indicated.

Of late years, the nux vomica, a medicine a good deal resembling the rhus toxicodendron in its effects on the constitution, has been much employed, especially on the Continent. Dr. Fouquier has been in the habit of giving it in the form of powder and extract, beginning with small doses, and gradually increasing them as far as fifty grains in a day.

"In a short time after it has been taken, spasmodic contractions of the muscles, he says, in a greater or less degree, or more or less general, are produced. Among the unpleasant effects of the nux vomica, especially in large doses, delirium, a sense of heat and oppression, and anxiety, may be mentioned. Sometimes general tetanus, with loss of speech and the power of deglutition, accompanied with difficulty of respiration, pulsation of the heart, and dysuria, have been experienced; whilst the good effects of this remedy are manifested by a gradual return of power in the paralytic parts. 168.

Dr. Dickson, of Clifton, has communicated the results of two cases, in which this able physician tried the nux vomica in hemiplegia with some advantage; and Mr. Rose, of Swafham, has published two cases, in which the powerful, rather than the beneficial, effects were sufficiently conspicuous. In the eighth volume of the Medical Repository, Dr. Granville has communicated the result of Professor Dumeril's experience of this medicine in a case of palsy, where complete success was obtained. Many cases, on the Continent, have since occurred, where the nux vomica appears to have produced much benefit in this deplorable malady; and we sincerely hope it may continue to support its character. Cantharides administered internally, have been productive of some advantage in Dr. Cooke's hands; but it must be given with caution.

In the treatment of paraplegia, where the cause appears to be in the spine, issues applied on each side of the vertebral column will, of course, be the principal measure to be depended on.

"In cases," says Dr. Cooke, "of paraplegia from diseased spine in scrofulous habits, I am of opinion that considerable advantage has in many cases been derived from a proper attention to air, exercise, diet, friction, sea-bathing, mercury in alterative doses, and certain tonic medicines, especially the bark." 184.

Dr Baillie's remarks on this species of the disease have been fully given in our last number, page 391, *et seq.* to which we refer.

Of the partial palsies, *amaurosis* is the most important; for the treatment of which, we must refer to the volume itself, and to our review of Dr. Vetch's work in this, and Mr. Traver's volume in our next number. With the following, we must conclude our extracts from Dr. Cooke's publication.

> "In those cases, in which the loss of motion of particular parts is accompanied with pain, Mr. Bell advises the application of leeches along the course of the nerves of the part affected, a free administration of cathartics, friction with laudanum, and proper supporting bandages. This plan, with the addition of opium and colchicum, internally taken in considerable doses, proved effectual in relieving the distressing case above-mentioned under the care of Mr. Bell." 207.

Towards the end of the volume, Dr. Cooke takes notice of the *paralysis agitans*, or shaking palsy, described by Dr. Parkinson; an exquisite specimen of which we saw a few years ago at Gosport; the unhappy victim of which is still probably alive. Mr. Parkinson's treatment of this remarkable variety, consists in local detractions of blood from the upper part of the neck; after which, blisters are to be applied to the same part, and a purulent discharge maintained by means of savine cerate. If this fail, large issues are to be established on each side of the vetebral column, near the cervical region, and kept open, with proper attention to the state of the bowels.

If we have been successful in rendering such an account of Dr. Cooke's work to the public, as may enable them to judge for themselves respecting its nature, object, and execution, we have done all that we attempted, and all indeed that the public require. When the scales of Justice are thus placed in hands, "*quas nulla movent vota precesve*"—the *opinions* of critics are but—"as dust in the balance."

Biographical Notice of the late Dr. GREGORY *of Edinburgh.*

(From the London Medical Repository, for May 1821.)

It is with no common feelings of regret that we announce to our readers the death of this distinguished Physician, which took place at Edinburgh, on Monday, April 2d. We have never, perhaps, had to record a loss which will be so strongly felt by the great body of medical Practitioners in this country.

There are few of them who are not proud to trace some portion of their success in life to the instructions of this veteran teacher. For above thirty years he annually taught the medical students of the University of Edinburgh the most important part of their professional duties; and to his great talents and distinguished character much of the eminence of that seat of learning may justly be ascribed. His class was crowded by the studious of all countries; and, in consequence, an admiration of his abilities, and a reverence for his character, have extended, not only as far as the English language is spoken, but as far as the light of civilization has spread in the world. We are sure we should only be echoing a very general sentiment were we to add, that there is probably no scientific man of the present age whose name is so universally revered, or whose instructions have diffused over so wide a sphere the means of relieving human distress.

In this persuasion, we have felt that we could not confer a greater favour upon our readers, than by presenting them with a few particulars regarding the life and writings of the late Dr. Gregory. In the fulfilment of this task we have been contented to avail ourselves of such materials as are immediately before us, rather than attempt a more elaborate memoir hereafter; believing that, in this manner, we shall most effectually meet the anxieties of our readers.

Dr. James Gregory was descended from an ancient family in Aberdeenshire, which for above two centuries has enjoyed a distinguished name in the annals of science, and been particularly eminent for mathematical genius. It is a remarkable fact, that a great number of the descendants of this family have filled, with great repute, professional chairs in different Universities.

Dr. Gregory's father was a professor of medicine, first in Aberdeen, and afterwards in Edinburgh. His grandfather was professor of medicine in Aberdeen. His great grandfather, the celebrated cotemporary of Newton, and inventor of the Gregorian telescope, was professor of mathematics, first at St. Andrew's, and afterwards in Edinburgh. The other branches of the family equally contributed to support, in this respect, the honour of the name. The elder, being that of the Gregories of Kinardy, even boast of a much larger number. Among them may be noticed Dr. David Gregory, professor of mathematics at Edinburgh and Oxford, the father of Dr. David Gregory, formerly Dean of Christ Church; Mr. Charles Gregory, professor of mathematics at St. Andrew's;

his son, Mr. David Gregory, who succeeded him in the same chair; and, lastly, the celebrated Dr. Ried, professor of logic at Glasgow.

Dr. John Gregory, well known to the medical profession by his admirable "*Lectures on the Duties and Qualifications of the Physician*," and to the world in general as the author of "*A Father's Legacy to his Daughters*," left three sons and two daughters, by Elizabeth, daughter of William, Lord Forbes, a lady who, to great beauty and engaging manners, joined a very superior understanding, and a more than common share of wit. The eldest son, James, (the subject of the present memoir,) was born at Aberdeen in January, 1753, and received the rudiments of his education at the grammar school of his native place. During the winter 1764—5 he studied at King's College, Aberdeen: from that university he was removed next season to Edinburgh, and the following year was entered of Christ Church, Oxford. He resumed his studies at Edinburgh towards the close of 1767, and continued there until the winter of 1773, when he was sent to London to prosecute his medical education. Here he became a pupil of St. George's Hospital. The pleasure with which he looked back upon this event of his life was often mentioned by him, and he had an opportunity of publicly testifying it last year, when he attended the annual meeting of the gentlemen educated at that hospital. In June, 1774, he graduated at Edinburgh. His thesis is entitled "De morbis cœli mutatione medendis." It treats, in detail, of phthisis pulmonalis, hypochondriasis, and gout; and concludes by noticing the advantage of change of air in the prolonging of human life. It is marked by the same elegance of composition for which he soon after became so conspicuous. As a medical work it is chiefly interesting, as containing a very clear exposition of the doctrine of *irregular distributions of blood.* During the whole of the year 1775 he was on the Continent; and in the course of his tour visited Holland, France, and Italy. Many of his letters, written at that time, are still extant, and prove that he was feelingly alive to all the beauties of nature, and a fervent admirer of the treasures of ancient art. Those who enjoyed the pleasure of his society well know with what delight he recurred to the incidents of this tour.

In June, 1776, he was appointed, at the early age of twenty-three, to the professorship of the Theory of Physic, and he continued to teach this class with great distinction for twelve years. As a text book for his lectures, he published in 1779-80 the first part of his *Conspectus Medicinæ Theoreticæ.* The work was complete in two large octavo vols. in 1782. It rapidly acquired a high reputation all over Europe; not only in consequence of the scientific merits it possessed, but the singular felicity of classical language in which it was written. Several editions of it have since been published; but it is greatly to be regretted that it never received from the author those additions and alterations which were required to adapt it to the present state of physiological, and more particularly of chemical science. Hence its value is now considerably diminished to the student of medicine; but it is still perused with the highest advantage for the general principles of the science; and, as a model of classical latinity, it will probably remain unrivalled.

In the year 1790, Dr. Gregory was appointed, in consequence of the death of Dr. Cullen, to the chair of the Practice of Medicine, and for thirty-two years he sustained, and even increased the celebrity which the eminence of his predecessor had conferred upon the office. His lectures, besides their intrinsic merit as the vehicles of sound medical learning, were characterized by a richness of illustration, which we imagine to be quite unprecedented. From very early infancy Dr. Gregory had been remarkable for a most retentive memory, and this he had diligently cultivated. The advantages which it gave him as a teacher of medicine are incalculable. He has been frequently heard to describe cases, which occurred in the earliest years of his practice, with a freshness and *particularity* of detail, which made them appear like the observations of the day. No case ever seems to have escaped his memory, which could enforce some principle of pathology or practice; and he could draw, therefore, *almost ad libitum*, upon these stores, for the most striking illustrations of the doctrine he was inculcating. This it was, which appears to us, in a great measure, to have given that charm to his class-room, which all his pupils acknowledged, and which sent them back to their homes with feelings of reverence for his character, more resembling that which the disciples of antiquity entertained for their instructors, than the regard for a teacher commonly manifested in the present state of society.

Of the effect of Dr. Gregory's lectures upon the general character of medicine, as practised in this country, it would be difficult for us to speak in terms adequate to our sense of its extent. To them we would attribute, in no small degree, that boldness and decision of practice, that just understanding of the powers of medicines, and that general candour which disdains the cloak of affected importance, by which we may, without the imputation of vanity or prejudice, characterize the medical practice of this country. It is much to be regretted that he never carried into execution the design which he had long contemplated, of publishing a *Conspectus Medicinæ Practicæ*, and we despair of ever seeing this deficiency supplied. The mass of medical information which he possessed was immense, and we much fear it has perished with him. No notes of his lectures can, we imagine, ever be considered as giving a correct view of his opinions or practice. We are led to this conclusion by considering how remarkably *precise* he was in the choice of his expressions, how frequently he varied his lectures from the mere extent of the subject before him, and with what candour he modified his views according to the experience by which he was continually profiting.

As a literary man, Dr. Gregory long enjoyed a high reputation. He was early devoted to the study of metaphysics, and in the refutation of the doctrine of necessity he displayed uncommon ingenuity. His Literary and Philosophical Essays, in two vols., were published in 1792. As a philologist, he is known by a very profound essay on "*The Theory of the Moods of Verbs*," published in the second vol. of the Transactions of the Royal Society of Edinburgh. Though not a professed mathematician, his mind was deeply imbued with the spirit of mathematical science, inherited from his celebrated ancestor; and this can be traced in all his writings, conspicuous alike for closeness of reasoning, clearness of arrangement, and the utmost precision of language.

His controversial writings are numerous, and display an exuberance of talent, a lively wit, and an extent of general information, which is astonishing, when we consider with what assiduity he cultivated, from a very early period of life, his professional pursuits. It has been said of him, that the nice and chivalrous sense of honour, by which he was distinguished through life, was perhaps too high toned for the tranquil exercise of his profession, as leading him occasionally into differences with his professional brethren, which many of his friends lamented, while they admired and venerated the high notions of personal and professional honour in which they originated.

In 1781 he married Miss Ross, daughter of James Ross, Esq., of Stranraer. By this lady, who did not long survive her marriage, he had not any children. In 1796 he married

Miss M'Leod, daughter of Donald M'Leod, Esq., of Glanies in Rosshire. By her he has had eleven children, of whom seven are living; five sons, and two daughters. The eldest son is practising at the Scotch bar; and the second son, who bears his father's name, is now qualifying himself to follow that profession of which his father was so bright an ornament.

To great merit, as a teacher of medicine, and a high reputation as a man of science and literature, Dr. Gregory added a distinguished character as a *practical* Physician. From the time he was first appointed to a chair in the University, he took an active share in the Clinical practice of the Infirmary; and the lectures by which he illustrated it are spoken of, by those who heard them, in terms of unbounded admiration. About the period of his second marriage he began to be actively engaged in private practice. This increased so much upon him, that in less than ten years afterwards he was obliged to give up his Clinical lectures, to the great regret of the students. For more than twenty years past his advice has been anxiously sought from every part of Scotland, and his visits frequently extended far into the borders of England. To the poorer classes his professional advice was at all times gratuitously open. Such, indeed, was the disinterestedness of his conduct, that his income was never nearly so great as the celebrity of his name might have given reason to expect, and his generous heart was always open to afford that relief which wealth can bestow.

The leisure time which remained to him from the fatigues of practice was divided between the conversation of his friends, and those lighter amusements in which his powerful mind was fond to indulge. His society was sought after by men of the first eminence and rank in the country. The brilliancy of his wit, and the epigrammatic force of his conversation, will long be remembered by those who had the good fortune to enjoy his acquaintance. To a numerous circle of relations and intimate friends he was endeared by the stronger tie of a kindness of heart, the memory of which must be indelible.

In gardening, Dr. Gregory early found a great source of amusement, and he continued to indulge it to within a few days of his decease. At one period of his life he was a zealous archer; at another he entered with spirit upon the duties of a soldier, and never ceased to look back with pleasure upon the time he carried a musket as a private grenadier. Possessing a fine relish for ancient poetry, he occasionally attempted to infuse its spirit into our own language. He was most happy in his *Inscriptions*, many of which are worthy of the proudest days of Roman literature.

In spring, 1818, he experienced a severe misfortune in the breaking of his arm, by the accidental oversetting of the carriage in which he was travelling. The injury which he received was very severe, and his health soon after began sensibly to decline.

In April, 1820, he visited London, after an absence of twenty-eight years, as one of a deputation from the University of Edinburgh to congratulate his Majesty on his accession to the throne. On that occasion he was honoured by a private audience of his Majesty, of whose gracious condescension he cherished the most grateful remembrance. During the last year he suffered severely from attacks of difficulty of breathing, which ultimately ended in hydrothorax, which put a period to his valuable life, soon after having completed his sixty-eighth year. His health did not permit him to give any lectures, during the last winter, after Christmas.

The course was completed by his nephew, Dr. W. P. Alison, in a manner which, we hear, has gained the approbation of a very numerous class.

His remains were interred in the family vault in the Canongate churchyard, with great solemnity, on Saturday, April 7; the funeral being attended by the magistrates, professors, and other public bodies, the students of his class, and many private friends. In the Canongate, where Dr. Gregory at one time resided, a very strong testimony of respect was paid to his memory, by shutting up the shops during the time the procession passed. An universal feeling of regret, indeed, has been expressed for the loss of one whose life was at once so honourable and so useful. Uniting, in a degree seldom equalled, the studies and acquirements of a man of science with the taste and honourable feelings of a gentleman, he shed a lustre upon the medical profession, whose influence will, we trust, be as lasting as it has been extensive and important. We know of no one to whose life and conduct may more truly be applied the classical words he himself inscribed on the tomb of one of his earliest and dearest friends:—" Vir priscæ virtutis, per omnes vitæ gradus et in omni vitæ officio probatissimæ."

The loss of such a man will be felt, as occasioning a blank, almost irreparable, not only in the academic celebrity of Edinburgh, but even in the national distinction of the country.

MEDICAL AND PHYSICAL INTELLIGENCE.

Letter addressed to the Medical Profession generally relative to Vaccination. By Dr. Edward Jenner.

Presuming that you are conversant with the practice of vaccine inoculation according to the instructions which I have formerly published, and that you may have seen, in addition to my general observations, those which I have since made and promulgated, respecting the "Varieties and Modifications of the Vaccine Pustule, occasioned by an herpetic and other eruptive states of the skin," I take the liberty of requesting to be informed whether the observations acquired in your own practice coincide with mine? That is to say, whether the vaccine vesicles, under these contingent circumstances, go through their course with the same regularity as when the skin is free from diseases of this description?

Secondly, Whether, on the other hand, such individuals are more liable to resist the legitimate action of vaccine lymph, when inserted into the arms, than those who are free from such eruptive affections?

Thirdly, Whether you have met with cases of small-pox, or what has been termed the varioloid disease, after vaccination: and, if so, whether in such cases you ascertained those deviations at the time of vaccination in the progress of the pustules on the arms, which I have described as liable to take place when the skin is affected with herpetic and other eruptions?

As you may not have the paper before you to which I here allude, nor the short series which followed it, I will point out the periods of their publication, and where they are to be found. The first was published in the Medical and Physical Journal, No. 66, for August 1804, and gives an outline of the subject, of some extent. It points out the fact, that a single serous blotch upon the skin, existing during the progress of the vaccine vesicles on the arms, may occasion such irregularity and deviation from correctness, that vaccination, under such circumstances, cannot be perfectly depended on.

I have found abrasions of the cuticle to produce the same effect; such, for example, as we find in the nurseries of the opulent as well as the cottages of the poor, behind the ears, and upon many other parts where the cuticle is thin. Happily we find no irregularity in the vaccine vesicle in an uncontaminated skin; but we find it if the skin is beset with these herpetic blotches, or even simple serous oozings from an abraded cuticle. It is not to be considered of less consequence when occupying a small space; a speck behind the ear, which might be covered by a split-pea, being capable of disordering the progress of the vaccine vesicle. Dandriffe may be considered as a malady of this class, the incrustation on the scalp being formed from excoriation beneath; and however slight, for there is every gradation between a thin scurfy layer of a dirt-looking substance, or even patches of this thin crust, and tinea itself. However, fortunately for the safety of the vaccine practice, and fortunately, too, for the ease of the practitioner, all these affections of the skin may be removed with very little trouble.* Sore eyelids are also impediments to constitutional vaccination.

The second paper relating to this subject was given by the late Dr. Willan, in answering to the following interrogatory, addressed to me by himself:† "What are the changes produced in the vesicle, when a person is affected during vaccination with the shingles, the vesicular ringworm, or impetigo?"

To this question I made a full, and I believe, a satisfactory reply. Its purport will be shown by quoting a few sentences from it. To answer this question in its fullest extent would lead me through a wide field of observation, which I mean to go over at a future time; but the following answer may probably convey to you as much information upon the subject as you may now require." Vaccination, under the circumstances you mention, usually produces a striking deviation from the perfect character of the vaccine vesicle at some period or other of its progress, but more frequently in its early than in its declining stages; indeed it is commonly perceptible in a day or two after inoculation. It would be difficult, perhaps impossible, without the aid of drawings, to give a correct description of the varieties which an herpetic state of the skin is capable of producing, from those trifling deviations which prove no impediment to the vaccine security, up to that point of imperfection in the vesicle which affords no security at all. Perhaps I commit an error in saying "no security at all;" for it strikes me that the constitution loses its susceptibility of small-pox contagion, and its capability of producing the disease in its perfect and ordinary state, in proportion to the degree of perfection which the vaccine vesicle has put on in its progress- and that the small-pox, taken subsequently, is modified accordingly.* When no deviation takes place in the ordinary course of the vaccine vesicles, or when it is inconsiderable, the herpetic blotches or vesicles, of whatever kind they may be, often assume (some times as early as the third or fourth day after the insertion of the vaccine fluid,) a new character, not unlike the vaccine, and, keeping pace in their progress with the vesicles on the arm, die away with them, leaving the skin smooth."

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* The most effectual application which I know for subduing these cuticular diseases, that produce impediment, is the unguentum hydrargyri nitratis, as much lowered with unguentum cetacei, or any other bland ointment, as the irritability of the subject may require. The dandriffe demands a double process; the first consists in removing the incrustation, the second in subduing the oozing. There are skins that will not bear unctuous applications; the desiccative lotions may then be made use of two or three times a-day; such as those prepared with the sulphate of zinc or superacetate of lead, &c.

† It was published in the year 1806, in his Treatise on Vaccine Inoculation.

These two papers comprehend, first, the simple fact of important deviations being produced by diseases in pre-occupation of the skin; and secondly, a general account of the characters of these deviations, and their differing degrees of influence upon the vaccine protection.

Some further observations were published by Dr. Wilson Philip, of Worcester, in an Appendix to his work on Febrile Diseases, who requested some information from me on this interesting subject. This letter goes more into detail than the former, though its purport is the same,—namely, to guard the practitioner against the insidious influence of a diseased skin, when he vaccinates. It will be an object of future consideration to enter more generally into the minutiæ of this subject; but a sketch like this does not afford scope for the completion of such a design. Let me advise every practitioner not to confine his cautions, nor to narrow any meaning, to one class of eruptive affections. In short, every disease of the skin which may be called *serous*, or one that sends out a fluid capable of conversion into a scab, has the power of exerting this modifying and counteracting influence; and I have also seen purulent fluids exert a similar influence in producing deviations. If I was asked what were the other actual impediments to perfect vaccination, as a general answer I should say, that I scarcely know any other except spurious matter,† or impediments too obvious to require my naming them here, such as deranging the vaccine vesicle in its progress; by incautiously robbing it of its contents, or producing a new action by external violence. (*London Medical & Physical Journal, for April* 1821.)

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* Further observation has confirmed this opinion, and has also developed much other curious matter respecting the spontaneous blending of the herpetic with the vaccine fluid, through the medium of the constitution, when under the influence of herpes.

† I am happy to see that these interruptions are now discovered in Germany; as appears in Professor Hufeland's Journal for June 1819, an extract of which is given in the London Medical Repository, vols .xiv. p. 502.

In addition, see Bateman's " Synopsis of Cutaneous Diseases," pp. 222, 223 Cross's " History of the Variolous Epidemic at Norwich, 1820," pp. 60 *et seq.* 196 and 288. I was lately puzzled to find the cause of irregularity in a vaccine vesicle the skin being free from any apparent eruption; upon minute inquiry, I discovered a whitlow on the thumb, in which suppuration had taken place.

Observations on the Treatment of Gout. By A. Veitch, M. D.

From the frequent occurence of gout in this neigbourhood, I have for some time, paid more than ordinary attention to the treatment adopted in that disease, and having found such decided benefits from the use of local as well as general blood-letting, but particularly the former, that I have been induced to give it publicity through the medium of your valuable Journal, that a trial of its effects may be more widely extended, and some of your more able correspondents induced more closely to investigate the *modus operandi*, which, if it tend to a more perfect knowledge of this mysterious diease, my object will be attained. It is by no means my present intention to offer any remarks, with a view to the illustration of any opinions I may entertain respecting the cause of this disease, though they may appear necessary, when so widely differing from the practice of the present day, but as that would lead into a longer detail than what I purpose by the present communication, suffice it for me to state, that I have, like others of my professional brethren, tried, and seen tried, in vain, so many and so various means, that I am doubtful whether the remedies have not oftener been worse than the disease itself; and it is no less painful to see men, in all ranks of life, daily swallowing the ephemeral specifics of the day, to the ultimate ruin of their constitutions, and substituting temporary cure for permanent mischief, without having it in our power to counteract the deleterious effect of these pernicious drugs. The following plan, however, has at least this advantage, that we are aware of what is doing, and have it in our power to regulate the means, according to the age, strength, and constitution of our patient. But, after every trial which I have made of it, no bad effects were ever produced, even in the most debilitated; on the contrary, it has never failed, when properly administered, and I am every day more persuaded of its beneficial effects.

I am aware, that the profession are not to be told, that general as well as local bleeding has before been recommended, tried, and abandoned; but, I am persuaded, it has been abandoned only in consequence of misapplication, and upon its proper application its success chiefly depends.

Leeches from the nature of the disease, are perhaps the best local application, and it is my usual practice, as soon as the patient begins to feel a fit of the gout coming on, and when its determination to a certain part is ascertained, by the commencement of *pain* in that part, immediately to apply four or five leeches, near to, or upon the part affected, though I have seen an attack on the knee entirely removed by the application of leeches to the foot. To the gout, the greatest attention, however, is necessary, not to apply them after *inflammation* has commenced in the part. The presence of *pain only*, and *not* of *inflammation*, is the time when they ought to be applied; if this is not attended to, the paroxysm, in place of being diminished, will be increased. On the contrary, by paying strict attention to this, the paroxysm will altogether be prevented, as well as its recurrence, by a timely reapplication, (if it should be found necessary by the return of pain.) Should, however, the swelling, pain, and also the *inflammation*, have come on so rapidly, or there has been a delay of the application, we must wait till the *inflammation* has somewhat subsided, before we ever apply the leeches; after which all the good effects will follow, and the hitherto suffering patient will in half his usual time regain the use of his legs and feet. In the event of the head, heart, lungs, or stomach becoming affected, general, as well as topical bleeding, combined with blisters, and calomel purgatives, will prove equally efficacious. I could give many cases both of old and young gouty subjects, who have found the most decided relief from this plan of treatment. In young persons, and those who have not had gout, were general as well as topical blood-letting, together with other antiphlogistic means, strictly adhered to, on its first commencement, they would have little cause to fear a second attack. An able and learned physician seems to have had similar ideas when in his (Clarke's) Compendium Praxeos Medicinæ, he says, "An florente ætate, viribusque minime labefactis, prima morbi accessione, sanguinis missio?" And the old gouty patient will feel many of his sufferings alleviated by the timely application of this *local* method; and when the limbs have become stiff from repeated attacks of gout, and the formation of concretions on the joints, "An sarsaparillæ decoctum acido nitrico et hydrargyri preparationes ad salivæ fluxum lenem ciendum?' (*Edinburgh Medical* & *Surgical Journal for April*, 1812.)

Alford Lincolnshire, 24*th Jan.* 1820.

Suggestion respecting the possibility of Destroying Cancer, by the application of Intense Cold, communicated to the Editor by a Medical Friend.

An expedient has suggested itself to my mind, by which I think that the application of artificial cold to a diseased part might be rendered very manageable: That is, by employing masses or plates of metal, cooled down to the requisite degree in a frigorific mixture, and then applied, for a sufficient time, to the part upon which it might be wished to induce mortification. I suppose that this effect would certainly be induced, by the application of heat, after withdrawing the cold application.

Such metallic masses might be formed to any shape or size that might be wanted, and would have the advantage of limiting the application of the cold correctly to the surface intended.

The section of Van Swieten, which I mentioned to you to-day, upon the subject of cancer, is 499. His speculation about curing the disease, by inducing mortification, commences with the words, "Sed an non possit totus cancer emori?" or, in the translation, "But is it not possible for a cancer to mortify?" and is continued to the end of that paragraph. The view he takes of the subject seems most sound and rational; and it appears to me that we possess an agent, in artificial cold, sufficiently powerful to execute his views. Having barely suggested the idea, I shall content myself with recommending it to your more mature deliberation.

It would seem to correspond pretty correctly to what Van Swieten was in quest of; but in deep-seated diseases, where the preservation of skin by the knife so much contributes to the cure, it would seem to be less suitable. In more superficial affections, or in prominent tumours, especially those with circumscribed necks or bases, it may have fewer disadvantages. (*Idem.*)

Utility of the Piper Cubeba in Leucorrhœa, communicated by Dr. S. Traill *of Liverpool.*

Having proved the utility of the Indian remedy *piper cubeba*, in many cases of blenorrhæa, I was led by analogy to try it on several persons labouring under leucorrhœa, and am satisfied, that it is a valuable auxiliary in this troublesome disease. In every instance it has mitigated the violence of the complaint, and in several cases has removed it. I have administered it in doses from 1 to 3 ʒ of powder; but many persons cannot take more than ʒi. without experiencing nausea; and ʒij. given twice or thrice a-day, will generally be found sufficient. As far as my experience goes, it is most useful in old and obstinate cases of blenorrhœa: in one recent case it seemed to have a tendency to excite hernia humoralis. (*Idem.*)

Remarks on Coffee as an Expectorant, by James Robinson Scott, F. R. S. *Edinburgh.*

As that state of the bronchial membrane, in which there takes place a pretty copious and free secretion of mucus, is unfavourable to the continuance of certain paroxysms of asthma, it becomes desirable to produce such a state, the symptom or indication of which will be as above, and therefore various medicines called expectorants are used. Coffee as a palliative in asthma has been long known. Some think it chiefly acts as an antispasmodic; but I was about a year ago forcibly struck with its singularly sudden operation as an expectorant in my own person; I found almost every expectorant fail in its effect but coffee. A friend observed and called my attention to the fact, that the *moment* I swallowed about half a tea-cupful of coffee without milk, I expectorated freely. I have since that time derived great advantage from its use, but I *always* find that the expectoration *instantly* succeeds to the introduction of it into the stomach, however dry, or even sore the bronchial membrane may be. No other medicine of the class of expectorants operates at all so speedily on me as coffee. How closely then must nervous sympathy be connected, and how quickly the nerves act over secretion? (*Idem.*)

Case of an Affection from Narcotic Drugs simulating Somnambulism. By M. Sarlandiere. From the "Bulletins of the Medical Society of Emulation." Published in the "Revue Médicale" for February.

On the 14th of March, 1820, Dr. Sarlandière was summoned to see a tailor, in the forty-fifth year of his age, whom he found in a state of permanent convulsion, with commencing symptoms of opisthotonos, the eyes being fixed and open, and the pupil so much dilated that the circle of the iris was scarcely perceptible: the limbs were at first convulsively moved in an automatic manner, which movement afterwards gave place to a kind of tetanic spasm.

The wife of this individual was likewise affected: she was, however, without the convulsive agitations of her husband; but she had fixed eyes, with excessively dilated pupil.

M. Sarlandière, having learned that the affections in question followed the use of an enema, attributed the symptoms to narcotic ingredients, of which the injections might be composed; and he therefore, in concert with M. Delarue and M Delaude, set about an examination of these ingredients, which were found to consist of datura stramonium, and the papaver nigrum, which had been given to these individuals by a herbalist in place of emollient herbs.

Purgatives were immediately administered in the form of clysters, and acidulated injections afterwards thrown up, as well as acid potions given to drink.

At the end of about an hour from the commencement of this treatment, the spasmodic rigidity by which the man was affected gave way, and he almost immediately placed himself in his bed in the same attitude as when sitting on his board; and now the symptoms of somnambulism became completely marked. He was imaginarily engaged in his usual occupations, appeared to be extending or folding up cloth, took hold of something which he supposed to be a needle, appeared to be threading this needle, and made a knot upon the imaginary thread. Sometimes supposing that he had let the thread slip, he renewed the operation of threading; and he appeared to make several unsuccessful attempts at pushing it through the needle's eye, till at length he seemed to have succeeded.

These statements are thus given in detail, for the purpose of showing to what extent the brain was occupied with a certain set of ideas: and it is necessary further to say, that all endeavours to make him hear and see were fruitless. He took not the smallest notice of loud sounds addressed immediately to his ears, nor did he regard any object placed before his eyes, intent only on his imaginary employment.

At times he seemed to conceive that some one had entered the room, and his countenance then assumed a smiling aspect, and he moved his lips as if speaking, (no sounds, however, were emitted;) the motion of his lips then ceased for some time, and he appeared to be listening to the reply of the visiter. He occasionally made the motion as if spitting, although in effect he did not spit. Now he seemed occupied in measuring for clothes; now in arranging and folding his cloth, cutting it with his scissars, and, in fact, doing every thing in the way of his calling. He was thus occupied for the space of fifteen hours, without eating or drinking any thing, excepting a few spoonfuls of citric lemonade, and this it was difficult to make him take.

By degrees he recovered the power of speech; he then commenced a conversation, imagining that he received answers to his remarks. It was not till towards the evening that he actually understood what was said to him, and replied rationally; his sense of sight was not restored till after the return of his speech; he shortly, however, was able to distinguish the persons who were about him. His head, notwithstanding, still continued to run upon his business; he persevered in his supposed employ, and actually conceived that he was making use of his trade utensils. This constituted, indeed, the most remarkable feature in the case. M. Sarlandière, at his sixth visit, found him under the same delusion; he was conversing familiarly with those about him, but still on the subject of his business; and all endeavours to convince him that he was not on his board, but on his bed, proved unavailing. It was now midnight, and M. Sarlandière ingeniously hit upon an expedient to change the current of the poor tradesman's feelings and thoughts, by holding a watch to his ear, letting him hear it strike the time, and then remarking that business had better be abandoned for the present, or it would prove too fatiguing, injure his health, and prevent the capacity of working the next day. This last suggestion proved the most effectual. The poor man now descended from his imaginary board, undressed, and laid himself down to rest. During the remainder of the night he was calm, with the exception of some involuntary startings; and, on the following day his senses returned. A slight fever succeeded all this agitation, which, however, soon yielded to a proper diet, quiet, and acidulated drinks.

In the case of the woman, the derangement was not so complete; but this was attributable to the circumstance of her not having succeeded so well as her husband in throwing up the injection, and to the immediate return of it. Almost immediately after the operation, she found herself strangely affected with giddiness; her arms seemed to have the weight of lead; she saw thousands of flies about her, to which succeeded a number of serpents, lighted kilns, and apartments hung with black; but in the midst of these objects she occasionally perceived those by whom she was really surrounded. She saw her own apartment, her husband, her furniture; &c. She continued the whole of the day sitting on a chair; and she thought that needles, scissars, and pieces of cloth lay about her. Sometimes she tried to lay hold of these things, in order to occupy herself at her accustomed work; but they seemed to elude her grasp. Sometimes she felt that she had succeeded in getting hold of them, and she set about using them as usual. The above she afterwards related from recollection; and M. Sarlandière had remarked, that her actions during the paroxysm corresponded with her account.

In her, as well as in her husband, the pupil of the eye was excessively dilated; the eyes themselves were fixed, and fully open: but throughout she was more alive to her actual condition, and when questioned as to the cause of her disorder, she attributed it to the enema she had taken in the morning. Sometimes she suddenly started, as if urged by a momentous impulse; sometimes she rose up as if to run rapidly from a pursuing enemy. But, during the whole time, she preserved the use of her speech, her ears, and even her eyes, when her attention was forcibly called to surrounding things.

We give the following abstracts of two cases, related with several others of more or less interest, by Dr. Venturi, first physician *della citta di Sanseverino*, that seem to us to present some very interesting facts for the consideration of theoretical pathologists, as well as medical practioners.

A girl, twenty years of age, was, in 1812, suddenly affected with very severe rheumatic pain in the middle and upper part of the back. A physician prescribed a spirituous embrocation. When this had been used two or three times, the pain disappeared from its first seat, and fixed just about the union of the last dorsal and first lumbar vertebræ. The use of the embrocation was continued; but the pain soon became almost insupportable, and seemed to be deeper seated. After a few days' very severe suffering, the patient began to experience a sense of formication in the lower limbs, that was soon followed by a sense of weight, and then, gradually, complete loss of sense and power of motion in them. Dr. Venturi saw her first after the lapse of four months from the occurrence of the paraplegia. The patient had then a *chlorotic* aspect, and had not menstruated for four months; the urine and feces passed unconsciously and involuntarily; and the lower limbs were flaccid, emaciated, insensible, and motionless. A dull and deep pain remained in the part of the spine above designated. The pulse became accelerated, and presented a vibrating character, towards the evening, when there was an increase of heat over the surface of the body generally, excepting in the paralytic limbs; the temperature of which was always below the natural standard. A gentle sweat came on towards morning, with which the fever disappeared. There was a periodical discharge of a large quantity of mucus from the uterus, accompanied with a sense of heat in the part, as if the uterus were affected with a sort of catarrh. Dr. Venturi commenced the cure by the abstractiou of about ten ounces of blood from the back, in the region of the part affected, by means of leeches, and the administration of three grains of kermes mineral, in six doses, daily, which were accompanied by a draught of infusion of arnica-flowers. After three days, the state of the patient having suffered no change, the dose of the kermes mineral was doubled, and two scruples of mercurial ointment were rubbed along the spine. This friction was repeated nineteen times, in thirty-four days. The warm bath was also employed. After the fifth friction with the ointment, the patient became conscious of the passing of her urine and feces, and in two or three days more the evacuation of them was entirely under the dominion of the will. After the ninth friction, the patient felt pain about the great toe of the right foot, like that from a recent blister: this sort of pain then extended over the foot, and was soon followed by sensibility to external impressions over the whole limb. Two days afterwards, the return of sensibility occurred, in a similar way, in the left extremity; and in a few days more the power of motion in both of them. The mercurial inunction was now omitted. Some occasional painful spasmodic contractions of the affected limbs now occurred, which were the only inconveniences experienced by the patient. These soon subsided, under the use of the warm bath and the infusion of arnica. It was thought proper to treat the patient for another month with steel medicines and infusion of gentian; at the end of which time not the least vestige of the disease remained.

The other case above alluded to was one of *amaurosis*.

A youth, thirteen years of age, of a slender habit of body, had been subject, from time to time, from his infancy, to ophthalmia. In the year 1813, he had a new attack, but slight to external appearance, and confined to the right eye, but accompanied with deep and very acute pain, which ceased during the whole of the night, but returned towards morning, and continued without intermission till the evening. During the paroxysm of pain, the affected eye appeared unusually injected with blood, the tears flowed copiously; the temporal artery on that side beat with violence, and the corresponding venous ramifications were tumid. At first there was intolerance of light, but afterwards the eye became more and more insensible in this respect; and on the lapse of two months the sight of the affected eye was totally lost, the pain having ceased, and no other morbid appearance of the eye being manifest than a little inordinate dilatation of the pupil. At this time the same inflammatory symptoms occurred in the other eye, and it was feared that they would be followed by similar results, and, consequently that total blindness would ensue; the stimulus of light producing at length but a feeble impression on the eye secondarily affected. Such was the case of the patient when he was first seen by Dr. Venturi, which was five months from the commencement of the disease. Many and opposite kinds of medical measures had been employed; as purgatives, sarsaparilla, china-root, valerian, ether, musk, camphor, opium, various collyria, vesicatories to the arms, and a seton in the neck.

Dr. Venturi remarked a great disposition to morbid excitement about the head: a slight degree of bodily exercise was sufficient to produce great heat in it, with copious sweating. He determined to treat the case by sedatives. Ten leeches were applied about the temple and external angle of the left eye. During the paroxysm of pain, a pledget wet with ice-water, frequently renewed, was kept on the eye. A spare diet was ordered; and the internal administration of oxide of zinc and extract of cicuta, in quantities of four grains of the former and eight of the latter daily. The quantities were gradually increased to fifteen of the zinc and twenty of the cicuta: but then, after a little time, vomiting being excited, they were reduced to the original extent. The paroxysms of pain soon ceased, and left the eye last affected in the natural state. At this time a favourable change took place in the right eye; the sense of sight began to re-appear, and it was after two months perfectly re-established. The patient presented for some time the curious phenomenon of a transudation of blood in the spot occupied by the cicatrix of the seton, whenever the excitement in the head, above mentioned took place.

On the Vascular Network of the Choroid Coat of the Eye.

Soemmering has lately occupied sixteen quarto pages in a very interesting work on this subject. Not satisfied with what had been already done, our author invented and tried various machines, in order to obtain a satisfactory view of the vascular network of the choroid coat. After more than twenty years trial to realize his wish, he on a sudden succeeded beyond his expectations by employing Woollaston's camera lucida, as simplified by his son, conjoined with one of Dollond's microscopes. Of incomparable beauty are the views of portions of the choroid coat, measuring scarcely one-fourth of a line square, obtained in this way; drawn by Soemmering the son, and engraved by Schleich. Portions of the choroid coat of a man, a child, an ox, a salamander, and a cock, twenty-five times magnified, gave the result, viz. that the finest vessels in the salamander are absolutely larger than those of the ox and man. "It is now proved as a new anatomical fact, demonstrated by ocular demonstration, that the blood-vessels of the choroid coat do not diminish in size, as the size of the eye-ball diminishes, but that the choroid coat of a small eye may be considered as a part of the choroid coat of a larger eye." (p. 20.) "Further, that the configuration of the vascular network of the choroid coat of the eye, in the various classes, genera, and species of animals, is so different, that the coat of each may be thereby readily distinguished."

The retina has a distinct set of blood-vessels derived from the central artery, and terminating in the central vein, and which have no communication or inosculation with those of the choroid coat excepting at the edge of the retina. From this separate system of blood-vessels, and owing to its own elasticity, the retina wrinkles and shrinks, not only after death, but during life, subsequently to violent inflammation, wounds and bruises.—(*Quarterly Journal of Foreign Medicine* & *Surgery*, *Vol.* ii.

Dr. Fouquier of Paris, to whom we owe the introduction of *nux vomica* into use, has latety been trying the efficacy of another powerful remedy—the *acetate of lead*, when given in larger doses than those in which it had hitherto been administered. "When a physician must renounce all hope of curing his patients," says Dr. Fouquier, "there often yet remains for him this consolation, that of alleviating their sufferings and prolonging their existence." The profuse sweats in phthisis contribute much to exhaust the patients of that disease, and hasten the fatal termination, especially when accompanied with colliquative diarrhœa. Dr. Fouquier thinks that he has found in the acetate of lead a mean of repressing this debilitating evacuation. He first employed that medicine in the solid form, in pills of a grain each: but he has since found it more convenient to administer it in solution in a mucilaginous mixture. He relates the histories of twelve cases, arrived at the last stages, in which this medicine was used, in one to the extent of twelve grains as a dose, without finding after death, in the patients who died in the hospital, any affection of the intestines which might be attributed to the mineral. In one or two individuals only were some slight colic pains manifested; and these did not appear to be owing to the medicine, as they were accompanied with diarrhœa, and did not vary whether or not the use of it was continued. In a few cases there was constipation, for the removal of which glysters became necessary.

Case of Extirpation of the Thyroid Gland, by Dr. Klein, *of Stuttgardt.*

A boy, eleven years of age, deaf and dumb, and of a very delicate constitution, had, from his infancy, a circumscribed tumor situated on the left side of the neck, about the size of a nut, and which had gradually increased in bulk. After having been put under the care of several practitioners, he was brought to Mr. Klein. The tumor commenced on the left side, at the margin of the jaw, occupied the whole of the left side of the neck, as far as from the larynx to behind the ear, and down as low as the third rib. Vessels of the size of the finger run over its surface: it was moveable with difficulty, rather because of its weight than of its adherence to the parts beneath. It was a little irregular, or tuberculated, in its construction; and the pulsation of the arteries which penetrated its interior could be distinctly felt in several parts. Its removal by the knife having been determined on, the patient was laid on a table, so that his head, shoulders, and legs, might be most effectually secured by assistants. On making the necessary preliminary incisions in the integuments, the veins, which were much dilated, were divided, and threw out about half-a-pound of blood; but they were soon secured by compression with the fingers, as well as the subclavian artery. After the flaps of the integuments were dissected aside, the tumor was forcibly drawn outwards; and, using sometimes the fingers and sometimes the scalpel, or its handle, it was separated from the larynx and trachea. The operation occupied a minute and a half; but Dr. Klein was surprised to find no hemorrhage, even from the thyroid arteries, which were, of course, divided. On examining the patient, however, he was found to be insensible; and, though every proper means was used for three-quarters of an hour, it was found impossible to restore him to life. On opening the body, it was found that neither the carotid artery, the par vagum, the jugular vein, nor the trachea, had been injured; but all the vsasels of the dura mater and the brain were gorged with blood: there was a lage quantity of serum in the ventricles. "I think myself authorized," says Dr. Klein, "to conclude that the patient died of apoplexy occasioned by the revolution in the circulation which the operation had caused. The tumor itself was found to be the thyroid gland, which had suffered disorganization throughout its whole structure, excepting a small portion on the right side. It weighed two pounds, and its base was of about six inches diameter in every direction. It was formed of a solid, lardaceous, reddish substance, divided into several lobules."

In regard to the cause of death in this case, we would suggest to others the consideration whether or not *moral* circumstances had some influence in causing it. The agitation and suffering of the boy,—being deaf and dumb, and consequently incapable of understanding the object or necessity of the operation,—must have been extremely intense. We doubt whether such an operation on such a subject was justifiable.

Vaccination in Denmark.

We have extracted the following statement from a statistical work on Denmark, lately published in the Danish language.

Vaccination was introduced into Denmark in the year 1800. In that year a society was formed at Copenhagen for vaccination, and a few days after a commission was appointed by the king, which is still in activity.

In a circular of the 13th July, 1816, addressed to all magistrates and bishops, it was ordered, that every one who had not had natural small pox, should be vaccinated; in default of which the individuals could not be received at confirmation, admitted into any school or institution, nor received as apprentices to trades, or as members of any public institution or government office. Moreover, no priest was permitted to join in marriage those who had not been vaccinated or had the small pox. In the event of the small-pox appearing in the country, all the inhabitants of the villages must submit to vaccination. The same in a town. All communication to be stopped between villages and houses where the small-pox appears, under pain of imprisonment, and fed on bread and water; the proprietor of a house, when the least trace of small-pox appears, is obliged forthwith to give notice of it to the curate, magistrates, and director of the police.

There is an institution for gratuitous vaccination at Copenhagen. Physicians and curates in the country vaccinate gratuitously. The general commission publishes every year a general report of the results of vaccination, and honourable mention is made of persons who have distinguished themselves by their zeal for its propagation.

The number of persons vaccinated in Denmark, (without including the dutchies of Holstein and Slesvic,) at the end of 1817, was 343,167. Since 1808, when the small pox was epidemic, it no longer exists, and is totally unknown.

The same regulations apply to the dutchies of Holstein and Slesvic, where in a population of 600,000; the number of vaccinated amounted in 1814, to 75,110.

It is remarkable that in 1791, a schoolmaster in the country, at Holstein, named Plett, had introduced a sort of vaccination, and was very zealous in 1812, in its introduction.

METEOROLOGICAL OBSERVATIONS.

STATE of the weather at Philadelphia during the first six months of 1821.

JANUARY.

Thermometer—Lowest, at 8 A. M. 5° below O—25th day of the month.
Highest at 3 P. M. 50°, 31st.
Mean, - - 23°.

Winds—variable—very deep snow on the 5th; ground remained covered with it through the month—weather very cold—abundance of sleighing. Niagara frozen over below the falls on the 2d—has not occurred before for 14 years. Thermometer on the 25th at sunrise, stood at 5° below O—at an earlier hour at 8°—colder than it has been for 30 years. In Montreal the thermometer is said to have been at the same time as low as 26°—below O. The Delaware frozen over since the early part of the month—also, New-York bay down as far as Staten Island, on the 26th.

FEBRUARY.

Thermometer—Lowest. at 8 A. M. 25°, 6th day of the month.
Highest, at 3 P. M. 47°, 10 and 13th.
Mean, - - 36°.

Winds—variable—weather rainy and mild early in the month—on the 7th the Delaware free from ice as high as New-Castle, on the 12th it broke up opposite the city, and vessels left the wharves for sea on the next day. Very destructive freshets in the interior of Pennsylvania and Maryland on the 1st. and 2d.

MARCH.

Thermometer—Lowest at 8 A. M. 22°, 19th of the month.
Highest, at 3 P. M. 69°. 16.
Mean, - - 42°.

Winds—westerly and southerly: weather remarkably mild and pleasant. Deep snow on the night of the 26th, succeeded by cold weather. Angina Tonsillaris unusually frequent in this and last month—also a slight eruptive fever, the eruption less diffused than scarlatina and less distinctly circumscribed than measles—was commonly called the French measles.

APRIL.

Thermometer—Lowest, at 8 A. M. 30°, 3d of the month.
Highest, at 3 P. M. 72°, 24th.
Mean, - - 50°.

Winds—variable, &c.—weather moderate—17th and 18th, hail, rain and snow.

MAY.

Thermometer—Lowest, at 8 A. M. 48°, 5th of the month.
Highest, at 3 P. M. 86°, 29th and 30th.
Mean, - - 61°.

Winds—southerly and easterly—much rain during the latter part of the month—spring more forward than usual.

JUNE.

Thermometer—Lowest, at 8 A. M. 62°, 2d of the month.
Highest, at 6 P. M. 87°, 25.
Mean, - - 74.°

Winds—southerly, with frequent refreshing showers during the early part of the month—the last 10 days very warm and dry—several cases of malignant fever occurred in Baltimore during this period—other southern cities in good health. The fruits of the season are very abundant, and the prospects for grain favourable. Crops of cotton and rice are very much injured in the low grounds in South Carolina by the excessive rains in the last and early part of this month. Locusts made their appesrance in immense numbers in some parts of Ohio and New-York. Bilious remittent fever—with a strong tendency to run into typhus, has again made its appearance amongst the coloured part of our population, and carried off considerable numbers—is principally confined to those who live in crowded and filthy situations, and who are intemperate in their habits—is not considered contagious. In other respects our city enjoys remarkably good health, and has for the last six months.

PENNSYLVANIA HOSPITAL.

Patients remaining in the house April 24th, 1820, - - -	209
Admitted from that time to April 28th, 1821, - - -	699
	908
Of these the number Cured, is - - - -	427
Relieved, - - - - -	124
Removed, - - - - -	59
Delivered safely, - - - -	42
Infants in health, - - - -	43
Eloped, &c. - - - - -	13
Died, - - - - -	47
Removed, - - - - -	153
	908

Managers of the Pennsylvania Hospital, elected May 7th 1821; *for one year.*

Samuel Coates,	Israel Cope,
Pattison Hartshorne,	Thomas Morris,
Zaccheus Collins,	Henry Hollingsworth,
Thomas Stewardson,	Alexander Elmslie,
Thomas P. Cope,	Matthew L. Bevan,
Joseph Watson,	Joseph Johnson, s. c.

TREASURER, Joseph S. Lewis.

And on the 14th the following contributors were elected Physicians for the ensuing year.

Doctors Thomas Parke,
Joseph Harthorne,
John C. Otto.
Joseph Parrish,
Thomas T. Hewson,
William Price.

College of Physicians of Philadelphia, July 3d, 1821.

The following officers of the College were duly elected.

President.—Doctor Thomas Parke.
Vice President.—Doctor Samuel P. Griffitts.
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Dr. Home has been elected to the chair of professor of Physic in the University of Edinburgh—vacant by the death of Dr. Gregory. The numbers were—for Dr. Home 17—for Dr. Allison 9. Majority 8.

The Medical Lectures in the University of Pennsylvania will commence as usual on the first Monday in November.

JOHN R. COXE, *Dean of the Faculty.*

OBITUARY.

Died, on the 9th of April last at Stenton, his seat in the neighbourhood of this city, George Logan, M. D. in the 60th year of his age.

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History of a Case of Human Rumination; with an Inquiry into the Nature of the Process, and into some of the Phenomena of Digestion. By James Copland, m. d. Member of the Royal College of Physicians of London. (In a Letter to Dr. Hutchinson.)

(London Medical and Physical Journal, for May, 1821.)

Perceiving, in your Proëmium for the second semiannual period of the last year, a case of human rumination referred to, and having lately had a similar affection brought to my notice, in an old and intimate friend, I am induced, from the great attention you have paid to physiological subjects in the direction of your Journal, to submit the particulars of this case, with some observations on the nature of the affection, to your disposal.

The novelty of such cases, and their physiological relations, led me to pay as much attention as was in my power to the particular phenomena constituting this affection; and the kindness and intelligence of my friend afforded me great facility in obtaining every information that I desired.

The subject of this case is a gentleman in the meridian of his age, of a strong but spare habit, and of the sanguineo-melancholic temperament. Owing to causes to which he was subjected through the very early period of life, he had been obliged to take his meals in a very hasty manner. This was continued through the subsequent period of early age, partly from the circumstances to which he was subjected, and in part from the activity of his mind in accomplishing whatever he was engaged in, whether serious employments or the pursuit of pleasure. The very few minutes allowed to his ordinary meals led to a hasty and imperfect mastication of the food; and, although his time was at his own disposal as he reached manhood, still the habit has been retained through the rest of the already passed portion of his life.

The greater part of its early period was spent in an active, varied, and pleasant employment, generally in the open air, and in the vicinity of the sea; and every moment that could be procured from his necessary avocations, was directed to study. This alternation of active exercise, in so healthy a situation, with mental exertions and periods of sedentary application, preserved the due equilibrium of the organic actions; the former neutralizing the effects produced upon the digestive functions by the co-operation of an hasty and imperfect mastication of the ingesta, and by a sedulous study.

So long as this diversified mode of living was enjoyed, the regular operation of the digestive tube was continued, and no symptoms of dyspepsia appeared, until he took up his constant residence in the metropolis.

The dyspeptic symptoms appeared several years since, and at the commencement were only occasional. Flatulence, acidity, and cardialgia, chiefly prevailed; but at no time did he experience any loss of appetite, which through life has been uniformly good; nor at any period has he had to complain of any serious malady.

For a considerable time, the chief and almost only complaint was apepsia, or water-qualm: for two or three hours after every considerable meal, part of the more liquid contents was ejected from the stomach, in large mouthfuls, at intervals of from two to five or ten minutes, attended with a slight acidity; sometimes with a slight flatulence and sense of fullness at the stomach, but never with any cardialgia, nor with the slightest sensation of nausea. This affection was generally augmented by any of the usual articles of dessert, or by port-wine; while it was relieved, or entirely prevented, by a moderate quantity of white wine during and after dinner, and by avoiding every species of exertion that could tend to disturb the function of digestion. This affection, after continuing several years, with occasional interruptions, according to the care and means taken to prevent it, passed at last into complete rumination, which has been present after every considerable meal for some time. But, as it was attended with less inconvenience than the preceding apepsia, and being unaccompanied with any disagreeable sensation, no great importance was attached to it, until it became complicated with a cutaneous eruption.

For that I was consulted; and, upon making inquiry into the state of the digestive organs, was readily informed of the ruminating affection. The professional intercourse that now took place furnished me with the particulars already related, which may serve as an introduction to a knowledge of the nature of this disease.

The following is a statement of the particulars of this case, when submitted to my care; for which I am considerably indebted to my intelligent friend.

The cutaneous eruption just alluded to, and to which my attention was first directed, owing to its being the chief object of concern with my patient, was the *lepra vulgare* of Willan; affecting the skin, to the extent of an hand-breadth, on the inner flexure of the knee-joint. It had been of two or three months' duration, and, with the exception of its apparent commencement in the same situation of the elbow-joint, it was present on no other part of the body. The ruminating affection was at that time generally present after all his meals, and constantly after breakfast and dinner.

The appetite was always good, and the food constantly taken in large mouthfuls, was masticated hastily and imperfectly, and swallowed eagerly. There was no thirst. Bowels were habitually costive. His sleep was sound.

His meals were taken more with a desire to satisfy an unpleasant sensation or a requisite desire, than to indulge the pleasures of the palate, and was performed hastily, in order that the studies and pursuits, to which he considered eating an interruption, might be immediately resumed.

Under the usual circumstances, rumination commenced from a quarter of an hour to an hour and a half after a meal. Immediately upon the commencement of this act, a slight sensation of fulness might be felt at the cardia, when the attention was particularly directed to it, that led to a deeper inspiration than usual. So soon as the act of inspiration was completed, and while the muscles of the glottis remained fixed, a bolus of the unchanged aliment rose rapidly from the stomach, with the first effort at respiration, at the moment when the diaphragm had just relaxed, and the re-action of the abdominal muscles commenced. But expiration did not take place until the alimentary ball had passed completely into the mouth, as the glottis remained closed until then: upon this having taken place, expiration was immediately effected; and so rapidly did expiration succeed to the regurgitation of the alimentay bolus, that the latter (unless when the attention was closely applied to the subject,) appeared as part of the expiratory act.

The ruminating process was never accompanied, at any time, with the smallest degree of nausea, nor any pain or disagreeable sensation. The returned alimentary bolus was attended with no unpleasant flavour, was in no degree acidulous, and was equally agreeable, and was masticated with additional pleasure, and with much greater deliberation than when first taken.

The whole of the aliment received at any one meal was not returned in order to undergo this process, only the part that had undergone an insufficient mastication; which indeed constituted the greater portion of solid aliment. That taken at the commencement of a meal was the first disgorged: this was ascertained by eating from a variety of solid dishes, or from partaking of different portions of the same. The more fluid portions were not always returned, unless along with the more solid or imperfectly masticated parts. When, however, the stomach was distended by a large meal, the fluid contents were frequently returned, and subjected to this process.

This affection may be considered as having been passively under the control of the will; and, although it sometimes took place when nearly unconscious of the process, yet it never occurred when the mind was incapable of being acted on by external impressions received by the senses. Thus, if at any time, from previous fatigue, and the concentration of the organic nervous energy towards the digestive organs, sleep was induced immediately after a full meal, this affection did not take place; but flatulence, acrid eructations, &c. afterwards supervened, and continued for some time, in consequence of the gastric juices being insufficient to the production of the requisite changes on the ingesta retained in a state of imperfect division. Very frequently, when the ruminating process was thus prevented, or voluntarily suppressed when circumstances required it, the ingesta, both fluid and solid, were returned at the end of several hours; but were then generally acid, frequently acrid and bitter, and sometimes in so large a quantity as to fill the mouth beyond its capacity of retention. But even then no cardialgia nor gastrodynia was experienced, nor the smallest degree of nausea; and even these disgorged matters were attempted to be masticated, although generally thrown out on account of the disagreeable taste.

In speculating upon the nature of this case, it appears evident that the energy of the digestive and assimilating organs were greatly diminished: consequently the stomach, deriving its influence, whether that presiding over the muscular action or vascular secretion, from the same source,—namely, the organic system of nerves,—experienced a proportionate diminution in its secreted juices. This was rendered apparent by the changes which took place in the aliments, when taken even in very moderate quantity, and when retained without being submitted to remastication.

Connected with debility of this organ, an increase of its animal sensibility, which it derives from the distribution of the eighth pair of nerves, appears to have been present. Under these circumstances, the gastric juices (being, as inferred, in diminished quantity,) could be sufficient only for a small portion of aliment, which nevertheless had been taken in an abundant quantity; and, having combined with that part whose state is most favourable to such an admixture, and being, by the usual action of this organ, conveyed to the pylorus, the imperfectly masticated portions, and that part which remains unpenetrated by the gastric juices, must either continue at the cardiac extremity, or be propelled there by the action of the stomach. That the undigested portions of the food do not only remain in that situation, but may, by a peculiar and complicated action of this organ, be conveyed there, may be proved not only by reasoning upon the nature of its organic action, but has even been demonstrated by large fistulæ of this organ, situated at its anterior convexity, and opening externally at the epigastric region. In a case in the Hòpital de la Charité, under the care of Corvisart, the complicated action of this organ was witnessed, conveying the digested portions of the ingesta towards the pylorus, which passed only a very small quantity, while the bulk of the unchanged aliment was propelled by a contrary action, to the opposite extremity of the organ. It cannot be supposed improbable that the irritation produced in this part of the stomach by the unchanged aliments in ruminating individuals, should excite the animal sensibility of this organ; and if the brain be in a state capable of receiving the sensation, it is propagated to the organs of respiration, and their action induced through the medium of the same set of nerves,—namely, the par vagum,—that forms not only the respiratory class, but also the connecting chain between the organic and animal orders of the grand nervous sytem; and, while it bestows an exquisite sensibility on the pulmonary system, it likewise gives a requisite, but sparing, share of its influence to this important organs.

In effecting the process of rumination, the organic contractility of the stomach can do no more than, by an elective process (soon to be explained), place the aliments about to be returned in a situation, in respect to the cardia, favourable to the excitation of the animal sensibility of this organ, and to its ready regurgitation and propulsion along the œsophagus. So soon as the demand is made upon the sensibility by the situation of the alimentary bolus, the par vagal class of nerves is excited to action, and a full inspiration is effected, as has been described. The introduction of the bolus into the cardiac extremity of the œsophagus, may be considered as effected by the ordinary contractility of the stomach; perhaps sympathetically heightened at the moment by the re-action of the abdominal muscles; while, at the same time, the diaphragm has just undergone relaxation, in which the cardia may, from intimate nervous communication, suffer a similar participation, and thus give facility to the ascent of the alimentary ball in the œsophagus, which immediately contracts behind it from the irritation produced by its passage, and the bolus is thus conveyed to the mouth.

That relaxation of both the diaphragm and cardiac extremity of the œsophagus actually exists at the moment, although the glottis still remains closed, appears confirmed, both by the period of the respiratory act at which this process is produced, and from the circumstance that, when any restraint is exercised over this affection, it is principally by means of exciting the diaphragm to a frequent and continued action, when the premonitory sensation is felt at the cardia.

The influence of the will appears to be requisite, since the process is interrupted during sleep. But this influence is only passively engaged in the production of the ruminating act, by bringing about the co-operation of the respiratory organs.

The elective process exercised by the stomach in this affection, is similar to that which it employs in periods of health, and may be considered as relative to the degree of digestive energy, and to the comparative states in which the various ingesta may enter the stomach.

During the process of digestion, contraction takes place irregularly and in various situations in this organ, according as various portions of the longitudinal or circular fibres may act: this operates in producing a degree of arrangement in the aliments; and, as the gastric juices combine with the more soluble portion of the food, especially that situated towards the mucous surface of this organ, which, when duly effected, is conveyed, by the varying organic contractility of the muscular coat, towards the pylorus; while a successive and concentric stratum comes in contact with, and, if in a permeable state from its previous comminution and admixture with the salivary juices, is soon penetrated by, the secretions of this organ; and even the central mass not unfrequently is obliged to yield its more fluid parts to the exterior layer, when there is a deficiency of fluids in the alimentary contents. Hence the not unusual necessity for drink that takes place as digestion proceeds. In the course of this process, as it is the result of the healthy functions of the organ, the chyme in contact with its mucous surface is conveyed in a direction from the cardia to the pylorus. But, if the propagation of the digested contents towards this extremity of the organ proceed faster than it can pass through into the duodenum, the accumulation of chyme that consequently takes place in that direction tends to propel, and even to return, the less soluble portions towards the cardia; where, according to the state of the organ, it may produce cardialgia, acrid eructations, or even rumination.

In the debilitated state of the stomach, and consequent deficiency of the secretions, digestion can be perfectly performed only when the aliments are presented in small quantity, and in a favourable state, from complete comminution and from intermixture with the salivary juices. If, however, in this state of the organ, the food is conveyed rapidly into it, possessed of neither of these requisites, so as to produce sudden distension, a re-action of this viscus upon its contents takes place; and, as the imperfectly masticated food constitutes the greater portion of the ingesta, there is abundance present to be returned into the cardia, while there is a deficiency of aliment in a fit state to combine with, or to be operated upon, by the gastric juices; which, when affected, is rapidly conveyed to the other extremity of this organ, by the re-action of the muscular coat, from the undue distension and the stimulus of solid contents. Thus a double effect is produced by the healthy organic contractility of this organ, when in a weakened state, and yielding a diminished quantity of the usual fluids; which state, indeed, may be considered as constituting this peculiar affection,—namely, that part of the aliment which is dissolved by the gastric juices is conveyed towards the pylorus, while, at the same time, the tonic action tending to diminish the capacity of the organ pushes the less comminuted and indigestible portions of food into the unresisting cardia; which is returned, as I have attempted to describe, in order to undergo a second comminution and intermixture with the salivary juices; after which it is in a fit state to be conveyed to its destination along the mucous surfaces, with the juices of which it combines, and thus permits a central portion of the mass to return and undergo a similar process.

Having occupied the attention of the reader so long, perhaps with a dry disquisition, on the succession of phenomena that appear to me to constitute this peculiar affection, I shall now very shortly direct his attention to the general plan of treatment which I pursued; after which, I shall exhibit a hasty sketch of similar cases that have attracted my notice.

In the curative plan pursued during the time this gentleman was under my care, the cutaneous eruption was viewed as originating in the long and progressive derangements of the digestive canal; and the ruminating affection, from the highly intelligent history of its origin afforded me by the patient, as well as of the sensations and connexions of the phenomena so kindly accorded me during my attendance, was considered as the most advanced and peculiarly modified state of dyspepsia, or gastric debility.

With this impression, the indications that obviously presented themselves were correctly pursued. Having premised full evacuations of the intestinal and biliary organs, a course of tonics, combined with gentle and corroborative aperients, was entered upon, and pursued for some time, in conjunction with the warm bath and frictions of the whole surface twice or thrice a-week, and the usually-adopted stimulating ointments and washes to the diseased parts of the cutis. Early in this tonic course, owing to the desire of my patient to have the cutaneous eruption as speedily removed as possible, I was induced to try the effect of the diaphoretics familiarly employed in similar affections. The various preparations of antimony were all found to increase the derangement of the stomach; guaiacum, either when combined with mezereon and sarsaparilla or with other medicines, produced the same effect; and the pilulæ submuriatis hydrargyri compositæ, which I have frequently employed with advantage in cutaneous diseases, produced in this case great gastric irritability.

Owing to the peculiar state of the digestive organs, the diaphoretic plan of treatment, which was entered upon merely to satisfy the desire of my patient,* was entirely abandoned; and no medicines whose direct operation upon the cutaneous expansions could be looked for, were employed, unless a pill of four grains of myrrh and one of ipecacuanha, given night and morning, as an auxiliary to a tonic draught in the middle of the day, may be viewed as operating in that manner; as no doubt it indirectly might.

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* It is not always a pleasant duty for a physician to treat the diseases of one who has no mean opinion of his own medical knowledge, although he may not professedly be a medical man.

Under the use of infusions made from a combination of vegetable tonics, aperients, and aromatics, with the addition of an alkaline carbonate or a carminative tincture, and the frequent use of the warm bath, with subsequent friction; while, at the same time, a deliberate mastication of the aliments, and a moderate indulgence in light and digestible food, was enjoined; amendment soon became apparent. After a fortnight's continuance of this plan of treatment, the cutaneous disease had made considerable progress towards removal, and the ruminating affection, which till then had been present after every considerable meal, was now very seldom experienced; nor did any symptoms of dyspepsia take its place, unless when the injunctions regarding the mode of living and mastication of the food were not attended to, or when subjected to causes operating a diminution of the digestive energy; then, dyspeptic symptoms, or even slight rumination, occasionally presented themselves.

Within a few weeks, the eruption was entirely removed; but the ruminating affection returned whenever the proper precautions were not observed. Having impressed the mind of my patient with the necessity of pursuing correctly the plan I had prescribed to him, upon the grounds that such an affection, if indulged, would, by impeding the nutritive functions, gradually undermine the energy of his system, he became more attentive to the state of his digestive organs and to his mode of living; and now, for several months, he has enjoyed perfect health, and had no return of the ruminating act. Having transferred, as he says, the gratification formerly enjoyed in the second mastication to the first, this process is now performed more deliberately; a more complete admixture of the aliments with the salivary fluids and with the air, takes place; while the stomach is less suddenly, and much more moderately, distended: the action of the bowels has also become more regular.

Cases of local Affections of the Leg, successfully treated by Plaster-Strapping. By C. W. Smerdon, Surgeon.

(From the London Medical and Physical Journal, for June.)

I am not aware that any other author than Sterne has dedicated a chapter exclusively to the subject of hobby-horses; still we are not to infer, from this want of respect in the antients for such favourite animals, that they were unknown to them, but rather that they were too common to excite particular attention: indeed, taking, it for granted that human nature is the same now as it ever was, we need make no scruples of conscience about determining that they were in use from the earliest periods, and will be so to the end of time.

Among the professors of the healing art, hobby horses are, and have been, very common,—and very serviceable, too, if not to the public who have frequently been kicked by them, they have been to their riders, although sometimes they brake down with them when ridden too hard, and were then totally incapacitated from rising any more. Since the publication of Mr. Abernethy's excellent work on Local and Constitutional Diseases, and the dissemination of the no less excellent Lectures of the late Dr. Curry, disorders of the biliary functions and of the digestive organs, have been quite as hobby-horsical among the faculty, as were the spasm of Cullen and the splendid doctrines of Brown.

It is quite natural that the promulgator of a new hobby for public use should ride it himself; and, if Mr. Abernethy has ridden his on all occasions, and sometimes too in a hard trot, the generality of people will readily excuse him for it, because the hobby is his own, and has been upon the whole of considerable benefit to them: but this excuse cannot extend to others, who, having borrowed it of him, have gallopped it most unmercifully and indiscriminately, and ridden over every body and every thing that came in their way. Indeed, this hepatic hobby was such a delightful one, that the public soon got hold of it, and presently became connoisseurs in fecal evacuations: nor was it uncommon to hear females in fashionable life lament their having any liver at all; for such patients as these will always be disposed to believe the greatest incongruities which plausibly account for the disorders that they feel, rather than attribute them to their legitimate source,—the turning of day into night, and night into day. The following case will illustrate these preliminary remarks, and will show what errors may arise from generalizing too much.

Miss F—, on the 1st of last September, applied for a singular affection of her left ankle and foot, which she has had for the last nine months. Her age, judging from her appearance, may be 30. She is of a nervous temperament; her complexion is rather florid; countenance animated, bearing upon the whole the marks of health; and her habits have always been domestic. The following account of her case I learnt from herself. About the latter end of the year 1819, she first began to feel an uneasy sensation in her ankle, but so trifling that she took no account of it, and did not prevent her from using her accustomed exercise. It did not long, however, remain in this quiescent state, but became increased in the evening after her dinner, sometimes accompanied with flushed countenance and palpitation of the heart: in the morning she usually became quite easy, the ankle exhibiting no other appearance of disease than a very trifling swelling. Her bowels were generally regular, and her appetite good. She described this uneasiness as a thrilling or creeping sensation, and sometimes, when it was worse than ordinary, she felt as if a number of needles were pricking her. To her own feelings, likewise, the ankle, during the excitement, was unusually hot, although in reality it was not so; and this morbid or erroneous feeling was increased, if the leg was not placed in the horizontal position. Sometimes her toes, and particularly the great toe, became affected with the same sort of pain. At length the disease became more severe, but still with the same character of commencing in the evening. She was obliged to curtail a portion of her accustomed exercise, and her evenings were spent very uncomfortably in retirement. One circumstance connected with this lady's temperament deserves to be noticed,—which is, that she could never be near the fire for any time without feeling a general uneasiness which she could not describe. Hot and close rooms likewise were always uncomfortable to her. This I conceive to be a mark of delicacy, particularly of the nervous system, having remarked similar peculiarities in delicate females who were highly susceptible to nervous impressions.

Her foot and ankle still becoming worse, she was induced to apply to a surgeon of the first eminence in London. He told her that her disease was constitutional, arising from a disordered state of the digestive organs, particularly of the liver; and he desired her to take three grains of mercury with chalk, every second night. This prescription she regularly followed for three weeks, without the slightest benefit; on the contrary, her bowels having been unusually confined during this time, she became more than ordinarily heated after her dinners, and her ankle and foot more painful and swelled. After having taken twelve of the prescribed powders, she returned to her surgeon again; and, as she was no better, expressed a desire that he should examine her leg. This he declined, being convinced that the affection there was merely symptomatic; and desired her to continue her powders as before. She took six more of them; when, not finding any amendment, she applied to another surgeon, who coincided in the opinion of his predecessor.

A short time after this, she went to Bath. The carriage motion occasioned by the journey, was torture to her, and increased considerably the heat and thrilling sensations in her ankle and foot. Fomentations of warm water, which she now applied to abate the inflammatory appearance, only served to increase the evil. In Bath, she applied for relief to a surgeon of eminence, who prescribed for her cold lotions and embrocations. Another practitioner of respectability, who was strongly recommended by a female friend, again recurred to the hepatic theory. He told her that all her complaints arose from an obstruction of the liver, which could only be removed by a course of purgatives, rest, and low diet. Although she was not a proselyte to this doctrine, she was anxious to try any means that held out a prospect of relief. She was under the care of this gentleman near two months. His first plan of treatment was active purgatives, abstinence from animal food and wine: but, alas! the obstruction was obstinate; and therefore, contrary to her better judgment, she was bled twice within the space of a week, and she escaped from a third operation by coming to Clifton.

In July last, she first became a patient of the late Mr. Baynton. At this time her health was suffering from the active treatment she had lately submitted to. She was much weakened, and, consequently, the palpitations and other nervous feelings were much increased. The journey from Bath, and a little subsequent exertion, had dissipated the trifling benefit her ankle and foot had derived from a long course of rest; and her spirits, which had never before forsaken her, were now much depressed. Mr. Baynton's opinion was totally different from his predecessors: he considered that the disease was local, and set about treating it accordingly. He applied plaster-straps to her leg, from the foot to the knee; he enjoined her to perfect rest, and to live as usual with respect to diet, omitting her wine. The straps gave her so much pain, that, after the third day of wearing them, a firm calico bandage was substituted in their stead; and she was desired to rub her ankle with an embrocation composed of one part of Goulard's extract, two parts of soap liniment, and three parts of rose-water. She remained under the care of Mr. Baynton, with the most marked benefit, so far as regards ease, comfort, and restoration of general health, up to the time of his death. The evening recurrence of pain in her ankle rarely troubled her while she wore the bandage with its necessary degree of firmness; but if this were left off for ever so short a time, and the limb suffered to hang down, the usual sensations would return, and not leave her until the bandage was replaced.

The shock occasioned by the suddenness of Mr. Baynton's death, brought back her nervous disorders, and with them the painful sensations of her foot and ankle: her leg also, along the course of the tibia, felt uneasy and sore to pressure. At this time it was that I first saw her. I found her mind extremely agitated by the loss of a person, from whose skill she had confidently expected the restoration of her health. Notwithstanding the long continuance of occasional pain in her ankle and foot, no external marks of disease were perceptible on them, except a very trifling degree of redness and swelling. The veins were not in the least varicose. Her extremities, she said, were generally cold; still fire was always disagreeable to her.

A little reflection on the whole of this case made it obvious to my mind, that either it was a constitutional disease producing local effects, or *vice versa;* consequently, a local disease did exist, to which remedies might be, and had been, applied with the best effect. It appeared to me reasonable that the pain which she felt in the ankle and foot, was occasioned by a morbid action of the cuticular nervous extremities of the part; and to this, I thought, might be attributed all the local affection. Pressure, by compressing the cuticular nerves, and by that means depriving them of a certain portion of their power, had been of considerable service, and might, I conceived, be rendered much more efficacious if the pressure were increased, at the same time that the skin was more firmly supported by a close adherence of the remedial means to its surface. I urged the permanent use of the plaster-strap again; but as, by their irritation, she had formerly experienced much distress, I proposed that they should be made of the soap-cerate, which, as a plaster-bandage, may be applied with an equal degree of firmness as the usual adhesive-strap; whilst it is perfectly free from any irritating quality, and may be removed without injury to the thinnest skin. She was, however, desirous to try the calico bandage only, for a short time longer; and she removed from this place to Cheltenham.

Here she applied to three medical men; the first of whom recommended her to immerse her leg nightly in a saturated solution of salt in hot water;—the second assured her that her disease arose from an affection of the kidneys! and recommended her powders of soda, rhubarb, and columba;—the third was of the same opinion as myself with respect to the plaster-strap; and, as she consented to a trial of the plan, he applied them, according to Mr. Baynton's method, from the toes to the knee. Thus equipped, she returned to Clifton, and experienced, during the journey, the greatest comfort from the additional pressure. A few days' wearing of these straps, however, convinced her that the new irritation which they excited would effectually counteract all the good effects of this plan; and she therefore readily assented to my second suggestion of the soap-cerate. This, indeed, fully answered the most sanguine hopes and expectations of either party. The straps thus prepared were applied firmly, as before, from the toes to the knee, with a calico bandage over the whole; and she was desired to walk as much as she could without producing pain or fatigue.

At the end of a week, when the plasters were removed, she had experienced little or none of her old complaint, although walking to some distance had been daily persevered in, and progressively increased; the straps, likewise, were removed without occasioning any additional irritation. I applied them three times, allowing an interval of a week between each application; when she left this place, with every prospect of a permanent recovery.

I am well aware that, by attributing this affection, and other anomalous diseases of the same kind, to a morbid action of the nervous system, I am adducing an hypothesis, the truth of which may justly be disputed. It is, indeed, of but little moment in practice whether painful local affections, which are neither the consequences of inflammation nor ever produce it, be attributable to morbid nervous action only, or to a languid state of the circulation of the affected part, such as we know is the case in a varicose state of the veins. In both instances firm and regular pressure is the most appropriate remedy, and is as certain of producing effectual relief as the most approved medicine is for any other disease. In the one case, the nervous extremities are blunted as it were by the pressure; in the latter, the weakened veins receive an important support from it, and are thus enabled to carry on the circulation with vigour.

I have at present a patient who long had a painful affection of the knee-joint. This is a stout woman, 45 years of age. The disease commenced without any apparent cause. She complained of acute pain and heat on each side of the patella, extending behind it into the interior of the joint. External pressure likewise was painful to her; while rotating the leg, and pressing the articulatory surfaces together, gave her no uneasiness. All that could be seen externally were a few tortuous cutaneous veins, a little enlarged, on the inside of the knee,—such as are generally seen at the commencement of white swelling. The pain was always worse when she was at rest; and was sometimes so considerable at night, when in bed, as to induce her to get up and walk about. Leeches, blistering, cold lotions, and fomentations, gave her but temporary relief; the pain and uneasiness returned again, as soon as the influence of these remedies was gone off. A large varicose vein which now for the first time made its appearance on the leg, determined me to try the effect of pressure. A series of plaster-straps, made with the soap-cerate, was applied, firmly commencing from the lower end of the varicose vein, and extending upwards so as to include the whole of the knee-joint; over this a calico bandage was likewise as firmly applied as possible. The relief which she received was as great as the most sanguine expectation could anticipate. So long as by these means the pressure is kept up, she has no pain in the knee or leg, and she is able to perform the laborious occupations of cook in a large family, with ease and comfort. Whether or not the cure will be permanent, I am not at present able to determine, as she has not ventured to leave off the pressure; but appearances decidedly indicate that it will be so. It is but right to say that the bandage alone, which was fairly tried before the straps were had recourse to, did not produce any alleviation of the disease.

The following cases, showing the good effect of firm pressure in herpes phlyctænodes affecting the leg, being intimately connected with the foregoing subject, may with propriety be inserted here.

Mrs. T—, by falling from a chair on which she was standing, wrenched her knee, which subsequently occasioned a good deal of pain, swelling, and inflammation. The usual remedies were applied, and lastly blisters. Two days after the removal of the last blister, (namely, Sept. 1, 1819,) the vesicated surface became greatly inflamed, hot, and very painful. Poultices, fomentations, rest, and purgatives, were here prescribed. On the third, phlyctænæ in patches made their appearance, surrounded by a deep erysipelatous areola. The skin was thickened, unyielding, and glossy. In spite of saturnine and mercurial lotions, ointments of various kinds, and mild mercurial purgatives, the disease spread rapidly around the knee and down the leg, producing, by a constant succession of eruptions, numerous deep, cellular, or honeycomb, ulcers, several of which were large enough to receive the top of the finger, accompanied with a discharge of thin ichrous matter. Beside the increase of heat, and the intolerable itching of the part, which usually came on worse at night, she felt a constant dull pain in the tibia, which gave her the sensation of something gnawing it. On the 27th of September, I determined on trying the effect of pressure. A series of plaster-straps, beginning from the middle of the leg, was applied upwards to the knee, and drawn as tight as possible; over these a calico bandage was also applied, from the foot upwards ; the ulcers having been previously washed with a zinc lotion. The pain consequent on this treatment was fully compensated by the comparative ease which she felt after it was accomplished. She was desired to walk about now and then; a luxury she had not dared to indulge in for the last four weeks. This plan of treatment was daily renewed, until the 14th of October, when the ulcers were entirely healed, and have ever since continued so.

About twelve months since, I met with another case of herpes, affecting also the upper part of the leg. This was in a woman, aged 43, of an unhealthy bilious habit. She had been suffering for some days before I saw her, and had applied constantly a Goulard lotion to the part, without any benefit. The disease was precisely the same as the one just narrated, and gave way, without any difficulty, to the same plan of treatment.

Clifton, *April* 8, 1821.

Observations on the Use of Nitrous Acid as a substitute for Blisters. Communicated by Dr. KENNEDY, F. R.S. E. and Fellow of the Royal College of Physicians, Edinburgh.

(From the Edinburgh Medical and Surgical Journal, for October 1820.)

Extract of a Report from Mr. Assistant Surgeon KILLETT, *of the 3d Regiment Light Cavalry, to the Medical Board, Madras, dated Mhow*, 4*th November*, 1821.

IN my report to the Board for the month of July last, I gave an account of the spasmodic cholera, as it came under my observation, during the short period it was prevalent at this place.

In that report, I recommended bleeding and blistering as the remedies chiefly to be relied on, considering the disease to be a spasmodic affection of the stomach and bowels, accompanied with inflammation, and quickly followed by a diminution of the powers of the brain; and I hinted that the actual cautery might be employed with advantage, as producing a more instantaneous counter-irritation, than the slow acting emplastrum lyttæ. Since writing the above mentioned report, I have been informed by Mr. Assistant Surgeon Powell of the Bombay Detachment, now in camp, that he has used the nitric acid to produce a quick counter-irritation, and with the best success. Of forty-one cases which Mr. Powell treated in this way, six only died; and of nine cases treated by an officer commanding a detachment, without medical aid, one only died, and this a woman six or eight months gone with child. The great good effects of this sudden and powerful counter-irritation were strikingly illustrated in the case of a European, who received immediate relief in the burning sensation at the stomach on the acid blister being applied; and who, the next morning, being annoyed with spasms of the extremities, requested the same remedy might be applied; it was accordingly done, and so great was the relief obtained to one leg, that he cried for God's sake to apply it to the other, similarly affected.

Another striking instance was that of a Lascar, seized while cutting wood a koss from camp, and who, on being brought in, was supposed to be past recovery, his stools passing away involuntarily, pulse imperceptible, and extremities cold; the acid blister was applied to the stomach, and the patient got well.

Mr. Powell uses two parts of acid to one part of water, and with this mixture rubs the surface over the part affected, to such an extent as may be thought necessary; as soon as the patient complains of pain, he neutralizes the acid, by washing the surface with a solution of salt of tartar; the cuticle can now be easily detached, and leaves the cutis raw, upon which he applies a common blister to keep up the irritation. He employs, besides, small doses of camphor and opium, frequently repeated, to allay the irritation at the stomach; this, with emollient enemata, forms his whole method of cure. I will conclude with saying, that the (forty-one) patients treated with the acid blister were all admitted in such a state, that no blood was attempted to be drawn.

Letter to S. Heward, Esq. *Superintending Surgeon, Presidency, from* William Scott, *Surgeon, Madras.*

In a letter to the Superintending Surgeon, dated 8th April last, I noticed some of the effects of the nitrous acid, used as a substitute for cantharides blister in cases of cholera.

I have now the honour to enclose some remarks on the more extended use of that application, which, should you think them worthy of notice, I will be thankful to you to forward to the Medical Board. With this remedy in our hospitals, it should no longer in urgent cases be observed in the journals, that the " blister did not succeed," or, " the blister was applied, but could not be kept in its place," for no circumstance can prevent the *application* of the acid, and its *action*, when applied, cannot possibly fail.

Saint Thomas's Mount, 9*th July*, 1819.

Remarks on the Use of Nitric Acid as a substitute for Blisters, by Mr. Assistant Surgeon KILLETT.

WE hear much of the successful application of firing by the native practitioners; and it is common to hear a farrier say of a horse, " blister him, and if it don't do, fire him, which never fails." The cautery is an ancient remedy fallen into disuse, but which nevertheless appeared to possess peculiar virtues.

Though, admitting the fact, that firing was more efficacious than cantharides blisters, I had no defined notions in what this superiority lay, but I could not impute it merely to difference in the *degree* of action, for the blisters used with horses seem often more painful than firing.

The substitution of nitric acid for cantharides blisters in cholera has given me opportunities of making some observations on its mode of action, which appear to me elucidatory of the subject.

Seeing the quickness of action of the acid in cases of cholera, and that it could be applied under any circumstances of frenzy or unruly conduct, I have been led to employ it in those cases of severe disorder in the stomach and bowels, consequent on excessive drinking, where the promptitude is of vital importance, and where common blisters are altogether useless and inapplicable; also in cases of acute and sudden pain from other causes, in hepatitis, and so forth; wherever the disease depends on spasm, or nervous irritation, the relief is *wonderfully sudden;* and when it is connected with inflammation, I think it is fully as certain, and more speedy, than after common blisters.

The pain, upon the whole, is represented as sharper than that caused by blisters, though some patients say not; but the chief point is, that it reaches its acme in two minutes; it continues severe for three hours, and in three more altogether ceases. It is in this *quickness of action* that it resembles the actual cautery, and to this therefore I impute the greater efficacy of both, for, it is reasonable to conclude, that the effect will be as the intensity of the cause; we may compare it to the shock produced by the *sudden* affusion of cold water on the surface, which, under a different management, may be altogether avoided.

But the acid possesses other advantages. Whoever has felt the tedious progressive pain of a blister, the wearisomeness and irritation produced, and the agony of motion; the sickness and disgust of the dressing, and the after sickly smell, itchiness, &c., will be disposed almost to suffer any pain rather than submit to a repetition; it is also obvious, that all these circumstances must have their bad effects on the patient. But the action of the acid is essentially different; the application is over in a few seconds; the pain, though severe, is at least soon on the *decrease;* is not aggravated by motion, nor by friction; no dressing is required, and the patient is often free from all the trouble of his disorder before the cuticle is abraded.

I have not seen any occasion for the after use of cantharides. If the acid has been diluted with half its bulk of water, and applied lightly with a feather, the cuticle is stained of a straw or sulphur colour; in three days it begins to pucker, with a little serum underneath; a slight red ring surrounds the parts, and the cuticle comes off on the 4th or 5th day, leaving the surface like a common blistered part, with a few deeper streaks, where the cutis vera has been touched. But if the acid has been used undiluted, or has been longer applied, the cuticle becomes of a deep brown; it does not rise or pucker, as the subjacent vessels necessary for throwing it off, appear to be destroyed; the red ring forming on the 3d day becomes deeper and broader, and a portion of the true skin, of the thickness of sheep's leather, begins to separate in six or seven days. The parts are rather tedious in healing, but this, taking it in all its bearings, is no great disadvantage.

As no serous discharge ensues, the acid cannot be substituted for blisters, in cases where *this* discharge is the motive of their application; neither, of course, can it be admissible when a continued rather than intense counter-irritation is thought to be indicated. But in all urgent and acute cases, and especially where the patient is unruly or restless, the acid appears to me to possess advantages sufficient to recommend its general adoption in practice.

Saint Thomas's Mount, 30*th June*, 1819.

Further Remarks upon the Seeds of the Colchicum Autumnale, containing Directions for gathering and preserving them; also, Observations on their infinite Superiority over the Root of the Colchicum Plant—with additional Cases to exemplify their Efficacy in subduing Chronic Rheumatism, and other painful Diseases. By WILLIAM HENRY WILLIAMS, M. D., F. L. S., of Ipswich, and Fellow of the Royal College of Physicians, London.

(From the London Medical Repository for June, 1821.)

As the period approaches which I recommended as the most eligible for obtaining the seeds of the colchicum autumnale, I think it requisite to observe, that the collector should be directed to depend upon the *seeds having assumed a dark brown colour*, which denotes their ripeness, rather than upon the *exact period* of the year for obtaining them in perfection—which the variableness of the seasons in our climate renders it almost impossible to ascertain with precision.

A more minute investigation, subsequently to my first publication on this subject, has enabled me to ascertain that in a pound of the seeds gathered in the latter part of June or early in July last, eleven ounces in weight were lost in drying; whereas the same quantity, collected at the end of July or the beginning of August, lost two ounces and a half only. In warmer and dry seasons, they may be found perfectly ripe a month earlier.

Now, as I have reason to suppose one half of the seeds gathered during the last year, were collected in an unripe state, yet having produced the beneficial effects already manifest, I am justified in believing that the further use of them will ultimately demonstrate to the public, the infinite superiority of the colchicum *seeds* beyond any other remedy hitherto employed, in cases of chronic rheumatism and many other painful diseases.

Much as the powers of the *root* of this plant have been extolled by different writers, I cannot omit this opportunity of declaring my decided conviction, that, however successfully different preparations of it may have been occasionally administered, its uncertain effects, the violence sometimes accompanying its operation, the little reliance to be placed upon the experiments hitherto made to ascertain the exact period of the perfection of the bulb, and the deterioration it frequently undergoes in keeping, are objections so weighty, that its value in the Materia Medica is insignificant, compared with the immense advantages attending the exhibition of the seeds.

I must here enter a protest against bruising the seeds—a practice which some persons have been induced to adopt, with the view either to augment their powers, or to obviate their scarcity; but as their valuable properties reside chiefly in the husk, or cortical part, the benefit of preserving them entire is obvious. I also strongly condemn the use of any other wine than sherry, in preparing the vinum seminum colchici; all British made wines being decidedly objectionable.

The colchicum plant, which luxuriates so freely in the open fields, is far less prolific when planted in a dry soil, and in confined gardens, where the seed-vessel seldom rises from the earth, and never arrives at maturity. It seems that nature having designed the seeds for the amelioration of those evils they are so well adapted to overcome, requires not their aid in the propagation of the plant, but furnishes, by means of the root, a profuse supply of it, where the soil and situation are congenial to its growth.

A trifling illustration will serve to prove how little satisfaction the experiments hitherto published upon the subject of gathering and drying the bulbs, can afford the medical Practitioner.

Mr. Thomson and Mr. Battley, in their late communications to the Editors of the REPOSITORY, have displayed great industry in their ingenious experiments to ascertain the precise time for collecting the *root* of the meadow saffron, and to point out the best method of preparing it, in order to divest it of its uncertain and deleterious properties. The most minute investigation has led them to very different conclusions, as to the portion of heat required for drying the bulbs—one of them preferring the atmospheric air, fifty degrees; the other a temperature of one hundred and seventy degrees. Both are of opinion, that the proper time for gathering the root, is about the *end* of *July;* whereas Mr. Haden, in his Observations on the Colchicum Autumnale, relates that the powder he found the most powerful, was prepared from the root gathered in the *middle* of *September*, when the plants were *in flower*, and dried in a temperature of one hundred and thirty degrees*.

Thus three several degrees of temperature, namely, fifty, one hundred and thirty, and one hundred and seventy degrees, are directed to be employed in a process, which, we are assured, requires the strictest accuracy in order to ensure a salutary effect!—contrasting this uncertain and hazardous process with the simple management of the seeds, which require only to be gathered when the brown colour denotes their ripeness—dried in the shade, and preserved in a dry place, would keep good perhaps for many years—mild and efficacious in their operation—they afford a desideratum worthy the attention of the public at large, and the medical world in particular.

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* Amidst such conflicting opinions, what confidence can be placed in the colchicum *root*, which, independently of the difficulty of preparing it for use, has such capricious and frequently lamentable effects? The little reliance Mr. Haden himself seems to place upon the efficacy of the colchicum root, may be inferred from his almost invariably calling in the aid of powerful auxiliaries to assist its operation.—See "Haden on Colchicum," page 23 to 28—74, and 75.

Were a variety of cases requisite to illustrate the valuable properties of the colchicum seeds, I have still ample means of furnishing them; but to those already adduced in my former papers upon the subject, I shall only add the following:—

Case 1.—Abraham B., aged thirty, of a good constitution, was attacked severely with rheumatism, at Michaelmas, 1820, which continued to harass him night and day, and to deprive him of the power, during the last three months, of following his employment as farming bailiff. His pains and weakness affected principally the upper and lower extremities and loins. His pulse was natural, though weak; tongue clean, and bowels regular In this painful and reduced state, he applied to me on the 10th of March, when I prescribed for him from thirty to sixty drops of the spiritus sem. colchi ammoniatus, at eleven o'clock in the morning, and a teaspoonful every night at bed-time, in a wine-glass of cold water, increasing the evening dose, if necessary, to a teaspoonful and a half.

On the 24th of the same month, he called upon me to request my assistance for a fellow-sufferer in the same parish, assuring me he had felt almost immediate relief from the medicine I prescribed for him, and that he was perfectly restored to health.

Case. 2.—Mrs. Mary R., aged fifty-six; of a delicate constitution, has been subject to rheumatism twenty years, during which time she was seldom free from pain and lameness, particularly in the lower extremities. The first attack of her disease confined her to the bed eight weeks, and so reduced her, that she compared her weakness to that of "a child a few months old." After an interval of nine years, she was again confined to her bed for six months, by the same distressing complaint. In January last she applied to me in a very reduced, painful, and crippled state. I advised her to take thirty drops of the vinum sem. colchici two hours after breakfast, and a teaspoonful at bed-time, in water, or weak ginger tea, which in a few days removed all her pains. By augmenting her doses one half, she found herself, in five weeks free from stiffness in the limbs, and enabled to walk without difficulty. Meeting her a fortnight since, I had, upon inquiry, the satisfaction of hearing that she was "perfectly well."

In this case, the nescessity of strict attention to diet was particularly obvious; for a fortnight previous to her consulting me, Mrs R. had taken the vinum sem. colchici to the amount of two ounces, with little or no benefit, which I attribute to her having freely eaten batter pudding and dumpling, with a bason of gruel at night. To such articles of diet, and all others of an indigestible and flatulent nature, there is the greatest objection, during the use of the various preparations of the colchicum seeds, inasmuch as such species of food invariably aggravates the disease, and prevents the salutary action of the remedy.

Case 3.—Mrs. H., aged fifty-four of a nervous temperament, experienced a severe attack of lumbago, on her recovery from scarlet fever, in November, 1820, which left her in a very debilitated state. Motion, in the slightest degree, rendered the pain in her back extremely acute. She was induced to take, of her own accord, two ounces of the vinum sem. colchici in the space of ten days, but without any diminution of pain. She then consulted me upon her case, and finding she had taken the medicine without any attention to diet, I enjoined the requisite restrictions, and particularly recommended the discontinuance of a practice she had imbibed, of placing her back opposite the fire, for the purpose of rubbing the loins with hartshorn and oil:—than which, nothing can be more detrimental—for in my opinion, the habit of sitting with the back to the fire, even in healthy subjects, is often the cause of lumbago, and in this disease prevents the salutary effects which medicine might otherwise produce. A strict attention to my plan of exhibiting the vinum sem. colchici, removed all her pains in the course of a week; and in three weeks, without the aid of any other prescription, she was perfectly well.

Case 4.—Sarah R., aged forty, of a slender habit, applied to me on the 30th of December, 1820, after various remedies for her relief had been tried in vain.

A sudden suppression of the catamenia, which occurred three years ago, produced, in a few months, oppression about the præcordia, palpitation of the heart, great flatulency, abdominal pains, restless nights, an enlarged œdematous, and painful state of the lower extremities, with a prostration of strength, which rendered walking extremely distressing to her. To all these symptoms, which were in existence when I first saw her, may be added, a loss of appetite, an emaciated countenance, and a tendency to fainting on the slightest exertion; but her tongue was clean; urine not deficient in quantity; bowels regular; and the pulse, though weak; not exceeding 84 in a minute. By taking the vinum sem. colchici twice a day, in horehound tea, commencing with thirty drops in the morning, and a tea-spoonful at bed time; gradually increasing the morning dose to a tea-spoonful, and the evening dose to two tea-spoonsful, almost all her painful feelings, and the swelling in her legs, were removed in one month, at which period a partial return of the catamenia took place. A perseverance in this plan, accompanied by a proper diet, and lessening occasionally each dose of her medicine, when the bowels were too active, have effected such an improvement in her general health, that during the last two months she has been able to walk to my house every alternate Saturday, and return home on foot without much fatigue—a distance of four miles.

At this time, I have another patient at the public dispensary afflicted somewhat in a similar manner, who has derived great relief from the same medicine; but her complaint is supposed to have originated in syphilis.

Case 5.—The following case has been just put into my hand by a medical friend and a neighbour of mine, in extensive practice, who tells me that he has given the colchicum seed wine in a variety of instances, and never without its affording relief:—

" Miss R., a young lady at school, of a delicate habit, about fourteen years old, who had not menstruated, had been troubled at different times for twelve months, with pain in the right hypogastrium; for which, when at home, she had been under medical care, and had made use of embrocations, plasters, and other means, with little relief.

" She came under my care in October, 1820; the bowels were not confined; there was no flatulent distention or swelling; there was some quickness of pulse, and a little fever; and pressure with the hand increased the uneasiness. Aperients, stimulants, embrocations, saline diaphoretics, and anodynes, were tried, but with little or no relief. Recourse was had to the vinum sem. colchici, in doses of twenty, thirty, or forty drops three times a day. In the course of a few days the complaint disappeared. In about three months it again came on; but by the use of the same remedy, it was speedily removed.

"Upon different occasions, I have known the same valuable remedy of extraordinary use in cases of pain, in young females, affecting different parts of the abdomen, when the periodical change was depending, and had not yet been established."

Case 6.—Philip K., a labourer, aged thirty, was afflicted four years with rheumatism, which first attacked him in the right knee, and, subsequently in various parts of the body, but more especially in the hands, wrists, neck, and shoulders. He applied to me, in a very painful and crippled state, in July, 1820, having previously taken, among many other remedies, with little or no benefit, four bottles of a "*celebrated* tincture for gout and rheumatism," which may be supposed to have been genuine, because they were purchased of the proprietor himself. His tongue was clean; pulse natural; appetite good; but his bowels were generally confined. With a diet precluding indigestible and fermentable food, I directed him, twice a day, in water or ginger tea, a tea-spoonful of the vinum sem. colchici, which, in a fortnight, when he again called upon me, had removed nearly all his painful feelings, and much of the rigidity in his neck and other parts.

By a perseverance in this remedy a few weeks, he was enabled to go through the harvest, and to work the whole of last winter very comfortably; whereas in the winter of 1819 he was totally unable to feed or dress himself.

On the 17th of February last, he called upon me, in consequence of having felt a slight return of his complaintin his shoulders and hands, when I prescribed him the spiritus sem. colchici ammoniatus twice a day; from which, not having since seen him, I have reason to suppose he found the desired relief.—On that day he *walked* from the place of his residence to Ipswich, distant nearly twenty miles, intending to *return home on foot* as soon as he was supplied with his medicine. His first journey to me was performed *with great difficulty on a donkey*.

It may be here remarked, that the costive state of the patient's bowels was wholly overcome by taking the vinum sem. colchici—an effect this medicine generally produces; to which I may add, that I have not found it necessary to recur half a dozen times to laxatives, among all the patients for whom I have directed any preparation of the colchicum seeds—indeed, by the assistance *alone* of this medicine, and a well regulated diet, I have been enabled to afford the desired relief in most of those painful and obstinate cases for which I have been required to prescribe.

Case 7.—Daniel B., aged thirty-five, of a robust constitution, late of the horse artillery, was discharged from that corps, December 9, 1815, in consequence of rheumatism, with which he had been afflicted a year and a half. His disease attacked him at Blatchington barracks, principally in the feet and ancles, of which he entirely lost the use; but his general health was unimpaired. He applied for my advice in October, 1817, when he was totally incapable of standing without the support of stilts. He was harassed with severe pains in his shoulders and wrists, and also with heat and tenderness in the soles of his feet, to such a degree, that in pressing them even slightly to the ground, he felt a sensation similar to that of placing them on hot iron. There was no external appearance of inflammation in his ancles or other parts of his body; his pulse was natural; tongue almost clean; appetite weak; and he had seldom more than two hours' sleep during the night. He remained nearly in this state upwards of two years, notwithstanding the use of the most powerful anti-rheumatic remedies, both local and general, which produced very little benefit. Early in May, 1820, he began taking a tea-spoonful twice a day of the vinum sem. colchici. In a few weeks his appetite increased; his pains were materially lessened, sleep gradually returned, and his feet were so improved, that, with the assistance of walking sticks, he began to hobble like a person who is just recovering from a severe fit of the gout. A perseverance in the medicine, increasing the dose to a tea-spoonful and a half, with a strict attention to diet, enabled him, by the August following, to undertake the harvest, with eighteen other men,—a task which he accomplished to the entire satisfaction of his employer, and with no other inconvenience to himself than a moderate heat and uneasiness in his feet. He still remains in the same service, where he is employed, chiefly as labourer, from morning till night: and upon my seeing him a few days since, he assured me, that a slight tenderness in his feet is the only symptom remaining of his rheumatic complaint.

Case 8.—Mrs. B., aged sixty-three, originally of good constitution, severely afflicted with rheumatism for seventeen years, was first attacked in her hands, knees, and feet, rendering her, at a very early period of her complaint, nearly a cripple, and totally incapable, during the last ten years, of attending her domestic concerns, or even of moving, without assistance, from her bed to her chair, not three yards distant. In aggravation of her affliction, she was in continual, and often excruciating pain, seldom sleeping more than two hours in the twenty-four.

In this distressing situation, her pains were in some degree alleviated by the use of the co'ds liver oil, for two years, when her stomach would no longer retain it.

In May last she commenced with thirty drops of the vinum sem. colchici twice a day. In a few days her pains were much relieved; and since that time she has been rendered so comfortable, that she now enjoys five or six hours' sleep during the night, and nearly as many in the course of the day. Her appetite, which had previously failed to a great degree, has so much improved, since her taking the colchicum seed wine, that, strictly adhering to my rules in regard to diet, (*the necessity of which, in all cases, cannot be too strongly enforced,*) she enjoys with comparative hunger whatever is placed before her; and such is her confidence, and the comfort she feels in the medicine, that she eagerly looks for every repetition of the dose—lamenting with tears any little circumstance which retards her receiving it punctually. Crippled, however, as she must always remain, from the contraction and long disuse of her limbs, she now enjoys comparative ease and comfort; for though nature is evidently sinking, and this afflicted individual may be removed, ere long, from all earthly sufferings, yet her latter days have been soothed, and her spirits exhilarated, by this great mitigator of human misery.

Case 9.—The following case was transmitted to Mr. S., a professional friend of mine, a short time since, to which I think it necessary to add, that after receiving, I am told, every assistance that could be obtained, John B., aged fifty-four, was considered incurable. He had long been cruelly tormented with chronic rheumatism, and with an indurated, enlarged, and painful state of the right wrist, for which he had experienced very little relief, either from private Practitioners, or those of a county hospital. His master the reverend Mr. ——, who farmed the glebe land through his assistance, was upon the point of giving up his favourite pursuit, from the inability of his old and faithful servant to continue his situation. Luckily, Mr. S. happened to visit his clerical friend at this critical juncture, September, 1820, and induced him to retard his intention of relinquishing his farm, until a trial had been made of the spiritus sem. colchi ammoniatus, of which he sent him, upon his return home, three ounces.

The salutary effect of the medicine may be conceived by the circumstance of the man being enabled, in the ensuing November, to follow the plough for several hours in the day without difficulty; and it will be still further confirmed, in the mind of the reader, by the following extract of a letter Mr. S. lately received from the reverend gentleman:—

"John B. describes his pain as fixing its head-quarters in the knuckle or hip bone, and travelling from that point in a direct course through the knee to the ancle. His power of locomotion was completely suspended; and so acute was the pain, that when in bed he was unable to bear the pressure of the superincumbent clothes, which at that time of the year (harvest) was not very great. In two or three days he found considerable relief; and when he had taken two-thirds of the phial or bottle which you sent, he was perfectly restored. About a month ago, he complained to me of a return of the pain in his thigh and knee, and I immediately gave him some of the medicine which was left, and which cured him in a week.

"At the time when he *first* took your medicine, he was afflicted, and had long been afflicted with a swelling and gathering in his right wrist, which deprived him almost of the use of that arm. Whether this had any connexion with his femoral or crural complaints—it is not for me to decide; but certain it is, that his wrist improved with his other limbs, and that he has ever since had more use of it than he enjoyed for eighteen months preceding. In truth, I feared that his labour was at an end, and of course that my farming occupation was gone.

"This is all the information I am able to give you, as I know not how to put questions to him; and rustics, as you are well informed, are not always clear in describing symptoms. Of this I am convinced, that he owes his present state of health, if not his existence, to the medicine which he received from you."

Case 10.—Henry C., aged thirty-six, of a weakly constitution and puny stomach, has been occasionally subject to severe attacks of rheumatism since he was seven years of age.

In April last, he was suddenly seized, when in good health, with a most violent pain in the right groin, which extended itself in a lesser degree to the knee, accompanied by a sensation as if the thigh bone were broken, on attempting to move the right leg.

The complaint was unattended either by fever or inflammation. A strong liniment was had recourse to during the day with no benefit. A very painful and restless night ensued; and in the morning, the pain continuing *equally* severe, he took, by my advice, thirty drops of the *tinctura** sem. colchici at twelve o'clock, which in three hours materially lessened his sufferings. By repeating the dose at bedtime, he experienced an excellent night's rest; and the following morning he felt scarcely any pain or uneasiness; and continuing the evening dose for three days, the disease entirely left him.

In former attacks, this young man suffered generally for several weeks, before the complaint could be removed.

On the Predisposition to Internal Inflammation. By GEORGE GREGORY, M. D.

(From the London Medical Repository for June, 1821.)

(The following is a most valuable paper. We shall be excused for soliciting particular attention to the precepts it inculcates.—ED.)

IN the investigation of the nature and varieties of inflammatory disorders, the attention of pathologists has of late been chiefly attracted to the differences among them, arising from differences in the structure primarily attacked. There can be no question, but that this topic of inquiry is one of the highest importance, that it has already tended to improve, in no ordinary degree, our views regarding general inflammation, and that a further elucidation of them may confidently be anticipated from a further prosecution of this branch of the subject. At an earlier period of medical science, a high degree of importance was attached, and certainly with some justice, to the varieties among inflammations, arising from differences of *exciting cause.* No one can observe the remarkable differences between venereal and common ophthalmia; between the sore throat which arises from cold, and that which is the result of the poison of small-pox, of mercury, or of lues, without being sensible that this source of difference among inflammations merits a degree of attention hardly inferior to that which is due to the former. But these, though important, do not appear to me to include all the questions which a consideration of the varieties of inflammation suggests. I have long been struck with the necessity of directing our views to the *predisposing* causes of inflammation, if we would wish to have a correct idea of the pathological distinctions that exist among inflammatory diseases, and perhaps, I may even add, with reference to distinctions in *practice*.

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* In my first paper on the subject of the seeds of the colchicum autumnale, I mentioned that proof spirit was an objectionable menstruum, inasmuch as a maceration of the seeds in it produced a turbid preparation, disposed, after filtration, to precipitate—an opinion I am desirous to withdraw, finding lately that proof spirit is preferable to sherry, on account of the variable quality of sherry, and of its tendency to decompose. I was led into the error of considering proof spirit an improper vehicle for the exhibition of the seeds, in consequence of having used, I find, as proof spirit, that which contained little more than one half the quantity of rectified spirit required to render it proof.

Two ounces (Apothecaries' weight) of the *unbruised* seeds of the colchicum autumnale, macerated from ten days to a fortnight in a fluid pint of proof spirit, daily shaking the bottle, produce, when filtered, a highly transparent tincture—in salutary power equal to the vinum seminum colchici, and in its preservative quality certainly superior, because not liable to fermentation.

There appears to be something not well understood regarding the predisposition to inflammation. It has commonly been remarked, that the state of body most prone to inflammatory disorders, is that of *tone* and *vigour*. It has been described as a state of extreme health. Dr. Cullen's words are, "that the inflammatory diathesis chiefly prevails in systems of of the greatest vigour." A full habit of body, a plethoric state of vessels, a tension of fibre, are the terms which have usually been employed to convey an idea of the state of the system, when predisposed to acute inflammation. Nor has this general notion of the *predisposition to inflammation* been a mere matter of speculation with Physicians. It has exerted a most powerful influence over their practice in inflammatory disorders. Supposing the benefit of blood-letting in these cases to have been originally the discovery of accident, yet to this source must be attributed the prevailing theory, that blood-letting operates by counteracting that state of *tone*, and *vigour*, and *tension* of the system, which is believed to be so favourable to inflammation. In this country, the effect of the principle may be traced still further, in the disposition which exists, in almost all Practitioners, to carry blood-letting, in severe cases, *beyond*, rather than risk being the least *within* the verge of actual necessity. It has led, in like manner, to the complete exclusion of all stimulating medicines from the treatment of inflammatory diseases, and very often to the prohibition, or, at least, very scanty supply of nourishing articles of diet during the period of convalescence. The notion has always been, that the inflammatory diathesis is a state of tone and vigour, and that the safest error, therefore, is that which inclines to keeping the system *weak* and *low*.

When we reflect, then, how directly applicable to practice are the views of Physicians regarding the predisposition to inflammation, we cannot, I think, refuse to acknowledge the necessity of satisfying ourselves that our foundations are secure. We cannot deny that an inquiry into this subject is at least as equally necessary as into the structures primarily attacked; a branch of the general doctrine of inflammation, which, as far as I know, has hardly as yet been made, in any degree, subservient to practice.

There may be some who will at once refer to practice, as a sufficient proof that such an inquiry is unnecessary. They may urge, that the acknowledged success of our treatment of inflammatory diseases is alone a convincing evidence of the correctness of the general principles upon which we act. But if any argument can be considered sufficient to supersede the propriety of inquiry, it is surely not this. Every one must have observed but too often, that, with all the care and skill which can be exerted, inflammatory diseases prove fatal. This is usually ascribed to one of three causes; either to the original violence of the disorder, which precluded, from the very first, all hope of safety by the exertion of medical art; or to the lateness of the period at which active measures were had recourse to; or, lastly, in some few instances, (with more liberality, perhaps, than strict justice,) the Practitioner is content to take the blame to himself, and to admit that he did not push these resources to their proper extent.

In such cases, it has probably seldom occurred to the Practitioner to inquire, whether there may not have been another cause to which the fatal event might have been attributed—I mean, the pushing of his depleting measures too far. To place the subject in a more general point of view, it may be asked, whether his want of success may not occasionally be attributable to the incorrectness of some one of the principles which regulated his system of treatment. Being myself inclined to think that this may, in certain cases, be the true solution of the question, I cannot acknowledge any force in that objection to the inquiry which I propose to institute into the predisposition to inflammation, which would triumphantly appeal to *practice* in proof of the justness of our present views regarding it. I have thought it, on the contrary, a subject well worthy of accurate investigation; and in the following observations, it shall be my object to throw out a few hints which may tend to solve the question, " how far we are warranted in giving entire credence to the ideas commonly entertained by pathological writers regarding the predisposition to inflammation?

From the time that I first entered into practice, I was struck with the circumstance, that almost all the instances of violent acute inflammation which came under my observation, occurred in persons who had been complaining for some time previous, or who had actually undergone some severe disease, or who were decidedly of weak habit of body, or among the poorest and worst fed of the population. The most severe case of pneumonia that I ever saw, occurred in a young man in the last stage of diabetes. It proved fatal in forty-five hours from the first invasion of thoracic symptoms. The most severe case of enteritis that I ever witnessed, occurred in a child, who, by the accounts of the neighbours, had been miserably fed, or rather half starved during the previous winter. Every one is aware how liable scrofulous children are to inflammatory attacks, and the scrofulous habit is certainly not one of *strength* or vigour. It is equally well ascertained, that in such children the disposition to inflammation is diminished by sea air, sea bathing, a nourishing diet, and whatever else tends to give strength and tone to the system. On no occasion are children more liable to attacks of pneumonia, than after small-pox, or measles. Hydrocephalic symptoms frequently supervene upon scarlet fever. In the latter stages of the most weakening disorders, how frequently do we find acute inflammatory symptoms coming on,—peritonæal inflammation, for instance, towards the close of phthisis pulmonalis?

It is unquestionable, that in some cases, inflammation attacks persons apparently in perfect health. In most of these, however, it will be found, on inquiry, that the constitution had given previous evidence of weakness, or that some previous disease had existed, weakening a particular organ or structure. Upon the whole, from the most extensive survey which I have been able to take of inflammatory disorders, I feel persuaded, that the state of body in which cold, and the other exciting causes of internal inflammation are most likely to operate, is not one of strength and vigour, but of *weakness*, *irritability*, and *atony*. This conclusion regarding the nature of the inflammatory diathesis, is more accordant with the simple dictate of reason, than the one which I believe to be chiefly inculcated in medical works. There is something revolting in the idea, that the state which approaches most nearly to perfect health, is, at the same time, the most favourable to disease.

It may be worthy of inquiry, whether the predisposition to inflammation is on a par with that of fever, hæmorrhage, spasm, and the different general states of chronic disease. Speaking generally, I presume there can be no doubt but it is; yet there are probably peculiarities in each, which may be deserving of separate investigation. On several accounts, however, I am unwilling to enter upon this inquiry at present, and shall refer it for discussion in a future Number.

The question more immediately before us, is connected closely with the doctrine long maintained of a distinction of inflammations into *active* and *passive*. Whatever foundation there may be for this distinction, it will probably be found to rest on some differences in the *predisposition* to inflammation; but the loose manner in which these terms have been used, and the imperfect way in which the doctrine has been developed, render it unnecessary to enlarge further on this head.

It has already been noticed, and it is certainly a very remarkable fact, that inflammation, when it occurs in worn out and weakened habits, is almost always of a highly aggravated kind. It is curious to observe such severe cases of inflammation commencing in exactly that state to which the body would be reduced by the means which we commonly employ for the relief of inflammation. Most of these cases prove fatal. We usually account for this by saying, that the constitution is weakened, and unable to bear up against the *necessary* depletion. But it may be asked, whether such depletion is really necessary in these cases?—Whether there is not a certain habit of body, in which, when inflammation occurs, a different system of treatment must be pursued from that which is successfully employed in a different habit?—Whether inflammatory affections, under certain highly aggravated circumstances of previous debility, are not decidedly increased by the severe depleting system usually followed in this country?

These are important questions, the answer to which are not so obvious as might have been anticipated from the uniformity of our antiphlogistic treatment. I would reply to them in the following manner. Without attempting at present to establish any strong line of distinction among inflammations founded upon differences of predisposition, I would urge as an important principle in pathology, that there are cases of internal inflammation which will not bear the common treatment, and which may even be aggravated by it. I am far from saying that the system of treatment proper in these cases, is totally different from that which is followed under more common circumstances. Probably the same class of means should be adopted, but they are to be handled differently.

To distinguish, in practice, the cases of inflammatory disease in which this caution is requisite, is by no means an easy task. It must be attempted by paying attention, in the first place, to to the circumstances of predisposition, and, in the second, to the symptoms present. When an inflammatory disorder occurs after a long course of scanty or bad food, or when it follows diseases attended with much debility, it may be expected to be of this kind. The pulse, in this form of inflammation, will be found different from that full and strong pulse which characterizes common inflammation. It will be found full, but easily compressible—a state of pulse which I have been in the habit of designating by the term *open pulse.* If a vein is freely opened, it will often be noticed that the blood suddenly stops, without any change in the position of the arm. After a bleeding, the patient does not express himself *lightened*, as is usual where venesection is decidedly beneficial, but *weakened;* and he consequently dreads a repetition of the evacuation. If we can, by these means, with any degree of certainty, distinguish, in practice, the cases in which a vigorous antiphlogistic treatment is required, from those where it is questionable, it will surely be right to do so, were it only to save ourselves from the reflection, that we had, *unconsciously*, added to the danger, or accelerated the fate of our patient. If we cannot, I am ready to admit that we had better continue as before, treating all internal inflammations upon the same principles, rather than incur the risk of losing one that active treatment might have saved. It is unnecessary for me to express my firm conviction, that by far the largest proportion of inflammatory diseases are to be benefitted by early and liberal venesection, and by that alone.

It may, perhaps, be argued, that the views here adopted, regarding the predisposition to internal inflammation, would go to prove that vensection is improper in *every* such case of disease. But this appears to me to be unwarranted. That blood-letting acts by diminishing the tone of the general system, is a theoretical notion which can never be either altogether proved or disapproved. It is sufficient for our purpose to know, that experience has shown it to be decidedly efficacious. The practical reflections that result from the remarks already made, do not go to impugn the necessity of blood-letting, but to show on what principles it is to be regulated, to what extent it is to be carried, under what particular circumstances it may prove equivocal, or possibly actually prejudicial, and where, therefore, it may be *boldly*, and where *cautiously* practised.

As one corollary from the preceding reasonings, I am aware that it would necessarily follow, that venesection cannot be trusted to with a view to *prevent* inflammation; nay, in some cases, it might even tend to increase the predisposition to that state of disease. Some persons may consider this as a decisive argument against the doctrine I have attempted to support; but I may anticipate this objection by stating, that experience will hardly bear out the views entertained by some authors, regarding the power of venesection in preventing inflammation.

It would follow, as another corollary, that, in cases where blood-letting has produced a decided effect upon the system, and a state of syncope has been induced, stimulant medicines may be administered without the risk, so usually dreaded, of renewing inflammation. Of the correctness of this principle, I have seen sufficient to convince myself; and the present essay will not have been written in vain, if it impresses upon those who are young in the Profession, the necessity of supporting the system by cordials in severe cases of inflammation, where large and repeated bleedings are indispensable for the removal of a local affection.

I again repeat, that the object of the present paper is to show, not that bleeding can be dispensed with in cases of inflammation, but that it is an *evil*, though a necessary one; that, therefore, not one ounce of blood should be drawn more than the circumstances of the case render imperative upon us; that in all cases the effects of blood-letting are to be carefully watched, and our practice regulated upon *them*, and not upon any preconceived notions of the *certainty* of deriving benefit from such a source—and this more especially in those most formidable of all inflammatory cases, where the constitution has been previously debilitated to any considerable degree.

Operation de Rhinoplastique par Professor Buenger de Marbourg, avec quelques Observations par Dr. Gosse.

(Communicated by L. A. Gosse of Geneva.)

(From the London Quarterly Journal of Foreign Medicine and Surgery, for 1819-20.)

N. N. aged 32, of a fair and delicate complexion, enjoyed a good state of health till her fifteenth year, when some derangement of the catamenia took place. About this period an eruption of small vesicles appeared on the left part of the upper lip, which the patient broke at different times. An herpetic eruption soon followed, which disappeared, and suddenly attacked the *alæ nasi*. The patient still continuing to irritate the parts with her fingers, the disease assumed a phagedenic character. Several physicians were consulted, and one considering the disease as carcinomatous, applied the arsenical powder of Frére Cosme, which destroyed the whole of the cartilages of the anterior part of the nose. In the mean time the disease extended to the cheeks, especially the left, without, however, being attended with any pain. In this state she was placed under the care of Dr. Buenger, who pursued a different plan of treatment. By a cooling regimen, antimonials, and a decoction of dulcamara, avoiding all external irritants, he succeeded in curing the sores on the cheeks as well as those of the nose. The epidermis still remained red, tender, and very delicate, breaking from time to time, according to the state of the weather, the winter season being the worst.

The deformity produced by the disease being so hideous, and the skin showing no tendency to resume its natural condition, Dr. Buenger on the 24th of April, 1818, removed, by means of a cutting instrument, about an inch and a half of diseased skin from the right cheek, aud with a view to ascertain the state of the constitution. The wound was brought together by three sutures, and complete union took place at the end of the third day, the cicatrix consolidating, and rapidly disappearing. Encouraged by this trial, Dr. Buenger, in fifteen days afterwards, operated on the left cheek where the skin was diseased to the extent of a crown piece. The cure was equally speedy, but the cicatrix remained rather prominent.

In about a month after this he undertook the cure of the nose, and wishing to obviate all deformity, he resolved to replace the skin of the nose by a portion of that of the thigh. With this intention he began to separate the whole of the diseased skin which covered the nose, taking care to preserve the periosteum of the bones of the *ossa nasi*. The wound was left exposed, and bled for four hours. He then cut an oval portion of skin from the outer part of the thigh, measuring three inches. He placed this morsel on his hand, removed a certain quantity of fat, and with a pair of scissars modelled it into a convenient form: this skin, while exposed to the air for a quarter of an hour, became white, cold, and shrunk considerably. The bleeding from the nose having ceased, Dr. Buenger applied the portion of detached skin to the wounded place, and secured it by eight sutures. Over these he applied adhesive straps, and a bandage to support the whole. The patient was placed on a proper diet, and desired to cover the nose frequently with her hands, with a view to warm the parts with her breath. At the end of three days he removed the dressings. The middle portion of the grafted skin had assumed a reddish colour, but the edges near the sutures were purple and gangrenous. She was ordered to apply warm fomentations. The space between the sutures suppurated, but the lower part separated in a state of mortification. The cicatrization of the upper part advanced quickly. When examined on the 11th of April, 1819, it presented the following appearances. The skin which covered the bones was fine, shining, tender, and whitish; above and behind, it was united with the integuments of the face; at the inferior part it was a little deficient under the bones of the nose, and curved inwards, particularly on the right side, where it almost entirely formed the nostril. The cicatrices extended from the middle of the dorsum of the nose to the base of the alæ, and resembled those which are produced by burns. The inferior septum of the *alæ* exists in part, and the interior of the nostrils is apparently sound. The upper lip is still the seat of slight morbid irritation, but in other respects the patient is quite well.

Dr. Buenger now proposes to form the extremity of the nose at the expense of the arm, after the manner of Taliacotius; and intends to remove the diseased part of the upper lip by the bistoury.

Observations by Dr. Gosse.

The case of N. N. affords an example of those diseases which are at first local in their nature, but by an empirical mode of treatment assume an appearance different from that which they had at the commencement, and terminate in the production of a constitutional affection. The disease of this woman made its first appearance as a case of simple *herpes labialis*, the effect perhaps of some local irritation rather than of any constitutional derangement. Left to itself, or by the aid of an antiphlogistic regimen, this affection usually disappears in a few days. Not so, however, when the irritability of the surface is too much excited; by repeated irritations, the functions of the nervous system are changed, and the character of the inflammation is modified; phagedenic ulceration, which is always aggravated by stimulating applications, soon manifests itself; the subjacent textures participate in the irritation, assume a schirrous appearance, and a true carcinoma, accompanied with vitiated secretions and constitutional symptoms, is at last established. A striking analogy, as regards the consequences here alluded to, exists between this herpetic affection and the *herpes preputialis*, which consists of an eruption of one or more vesicles, disposed in groupes, attended with a sense of burning and itchiness, having its seat in the mucous membrane of the prepuce or glans, whose functions are so easily modified by a local irritation. These vesicles bursting, form slight excoriations, and from mechanical irritation, want of cleanliness, or from the urine acting on the excoriated surface, they are frequently converted into ill conditioned ulcers, which become phagedenic. They are in this state too frequently regarded as the effects of a specific virus, treated accordingly, and followed by constitutional symptoms. Do not many of the affections supposed to be syphilitic owe their origin to such a cause? Does not this fact shew the danger of employing mercury in such a case—a mineral which, although it indirectly exerts an antiphlogistic influence on the system, has a primary irritating effect? This ought to induce practitioners to attend to the primitive symptoms, and prefer the antiphlogistic treatment.

To arrest the progress of phagedenic ulceration of the nose (*Noli me tangere, lupus, &c.*), the application of the arsenical powder has been recommended; but when we consider that it is impossible to limit the destructive action of this application, and the consequent danger to which the cartilages are exposed, we shall be inclined to deem the recommendation of the knife more judicious. I know it has been proposed to supercede both these operations by a local treatment of an antiphlogistic and soothing nature, and general tonics, particularly where organic alteration has not taken place to any considerable extent. It is in cases of this kind, I presume, that the flesh of green lizards eaten raw and quivering, after the fashion of some American tribes, has proved beneficial. A case of this sort I witnessed myself, in which the cure was to be attributed to the salutary vital action which resulted from the administration of the above article.

With regard to the operations performed by Dr. Buenger for remedying the deformity of his resolute patient, we see that the extirpation of the disorganized skin of the cheeks was the best means of preventing a relapse, and ascertaining the state of organization before proceeding to the treatment of the nose. The precaution of leaving the wound of the nose exposed to the air, and even waiting a considerable time until the hemorrhage ceased, is founded on the fact that re-union takes place much more easily when this rule is observed than when the lips of the wound are too soon brought together. This precept is taught in the medical school of Vienna, and applies to all operations by the knife, in which we wish union by the first intention. When we close the wound too speedily, before the bleeding from the smaller vessels has been stopped, the blood which is interposed between the two surfaces has no tendency to become organized, and suppuration is promoted;

whereas, exposure to the air, and the application of a liquid of a low temperature gives rise to an exudation of lymph, which is necessary for the adhesion of the parts. This practice is further deserving of adoption, as it obviates the necessity of multiplying ligatures, and thereby greatly diminishes the sufferings of the patient. Mr. Carpue informed me that he had occasion to verify this observation in the operations which he performed upon the nose.

The question of *animal ingrafting* has much engaged the attention of modern physiologists and pathologists. Although the labours of Taliacotius had placed beyond a doubt the possibility of transposing living parts when a particular management was observed; and notwithstanding the accounts given by Garengeot and others, it has been denied even in these times, particularly in France, that a part entirely separated from the body is capable of re-acquiring vitality. The thing is now, however, proved by the most authentic facts. An Italian has transplanted and ingrafted portions of skin from one animal to another, and Dr. Buenger has here demonstrated that the same phenomenon may be effected in the human species.

The circumstances which appear the most singular in this case, are the changes which took place in the insulated skin, the unfavourable appearance which it assumed, and the length of time which elapsed from the moment of its separation to that when it was applied, with the course which it followed in its re-union, and the modification of structure which it underwent in its progress. Vitality and circulation were first established in that part which was in contact with the periosteum of the bones of the nose, while the edges and extreme portions fell into a state of mortification. The sutures evidently favoured this disposition to gangrene, and the simple adhesive straps would have been preferable. It may be also observed, that the care which Dr. Buenger took to expose the parts which had been operated upon to the influence of the warm breath, in no small degree contributed to the success of the operation; particularly if we look upon the breath not merely as a simple aqueous vapour, with the addition of caloric and carbonic acid, but as partaking of the vitality of the organs which excreted it, and containing principles eminently animalized.

Medical Letters from Paris—From the Revue Medicale Historique et Philosophique. No. II.*

[No. 1.]

Paris has long given the ton to Europe, and so completely dictates to the provinces, that whatever comes from the capital excites the greatest curiosity; a feeling the more predominent in medical men, from its having been as yet, with regard to them, less gratified. The daily papers detail only events of general interest, and the scientific journals exclude all anecdote. To fill such a gap will be a difficult enterprise, and the execution of it will offend many; but the consideration that science and the public will gain by it, is a sufficient incitement to the attempt.

Petitions have been presented to both Chambers, to protest against the suppression of the "concours" in the election of Professors, and one of the petitioners has proved to demonstration, that the only object in this suppression is to serve the interests of M. Royer Collard. As a *physician* this gentleman is little known. He is at present, however, so connected with the medical chit-chat of Paris, that you will soon become acquainted with him. I must here observe, that so serious an accusation has devolved on M. Royer Collard by his own fault. We have such a propensity to judge of the intrinsic goodness of things by the event, that if this gentleman had taken the trouble to study chemistry, anatomy, and medicine, by way of qualifying himself to deliver a course of medical jurisprudence, there is no doubt but he would have saved Government from all the blame which this election has thrown upon it. William Hunter arriving, at the age of twenty-two years, from the mountains of Scotland, where he exercised the trade of a carpenter, became nevertheless one of the first anatomists of England. M. Royer Collard, arriving at Paris at the age of forty from Chambery, where he performed the duties of commissary, might have found some better method of teaching medical jurisprudence than by reading lectures copied from a printed book, which is known to the whole world. The source from which the Professor drew these waters of science was soon discovered; each student being able to taste them at the fountain head for the moderate sum of thirty francs, the price of M. Foderé's excellent Treatise on Medical Jurisprudence, did not hesitate between this expense and the fatigue of listening to tedious lectures—so that the Professor found himself abandoned by his pupils, and left alone with his MS. in the vast amphitheatre of the schools of the faculty.

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* The following letter, which we extract from a most respectable French Journal, will put our readers in possession of all the medical chit-chat of Paris. It is written with great spirit, and contains much truth, and no little malice. We have suppressed many parts of it which were uninteresting, but we have added nothing.

Such a mishap is certainly a sufficient apology for M. Royer Collard's having given so few lectures in the first year of his professorship, and for having, during the succeeding years, renounced all public instruction. Still we are indebted to the Professor for the excellent course of lectures which his pupils heard in the summer of 1819. As director of the "Bibliotheque Medicale," he insured the success of the work by contributing the fewest articles to it; as professor of medical jurisprudence he felt it his duty to resort to similar means to recall his truant pupils, and accomplished his object by employing M. Orfila to lecture for him, and the success of the experiment did not detract from the reputation of the learned author of the "Toxicologie."

Several nominations followed that of this able chemist. M. Beclard was called to the chair of anatomy, M Marjolin to that of external pathology. MM. Fouquier and Roux have also been lately appointed, the first to the chair of the "Clinique de Perfectionement," vacant by the death of M. Bourdier, the latter to a chair of pathology, vacant by the resignation of M. Percy. A-propos of this resignation; it is said in the medical world of Paris, that 60,000 francs was the price M. Percy received for this professorship—certainly a large sum for a place, the receipts and preservation of which are not certain.

The case is not without precedent; at Montpellier in 1786, M. de Barthez sold a professor's chair to M. Grimaud for 30,000 francs. This is great authority for the venality of professorships; which, however, has one little inconvenience, i. e. that of excluding the poor man of talent, though it presents the inappreciable advantage of narrowing the field of favour—a divinity more to be feared than riches. Still we cannot complain of similar bargains, when they bring such men as M. Roux into a more extended sphere of usefulness. This excellent surgeon and learned professor must always have appeared to advantage in a concurrence with any rivals.

The claims of M. Fouquier to the chair of the Clinique de Perfectionement are less popular. You are perhaps acquainted with a curious memoir of this physician's, on the use of strychnos in palsy. This plan has sometimes succeeded in the Hospital of la Charité, but the physicians of the Hotel Dieu have not derived the same advantage from it. It certainly at first induces a species of convulsions which have a salutary effect, but its efficacy is soon lost. M. Fouquier is highly esteemed as a practical physician, and he has given some useful courses on the practice of medicine.

Since the suppression of the concours, the faculty of medicine presents to the choice of the committee of public instruction four candidates. The three latter are however only inscribed for form's sake. This sort of election is not at all approved by the faculty, who accordingly, in 1818, unanimously demanded that the vacant professorships should be given by the "concours." The committee of public instruction refused to accede to this request, and to avoid all discussion with the faculty, resolved to choose the first of the candidates named. It was therefore without any chance of success, that MM. Husson, Recamier and Pariset were joined candidates with M. Fouquier.

The medical world was surprised that M. Alibert was not named amongst the candidates. The object of the professorship given to M. Fouquier, is undoubtedly the treatment of chronic diseases, and M. Alibert has distinguished himself by his skill in treating the most formidable of this class. But, perhaps, you will say M. Alibert did not solicit the honour. M. Double who did, did not obtain a single vote. It is a misfortune for these gentlemen, but a greater still for public education. The confidence of the King, and the high reputation of M. Alibert, are an ample indemnification; and M. Double may also console himself with the esteem of the most celebrated physicians, who consult him in all their difficult cases, and with the approbation which all Europe has conferred on his writings. Remark, that in what I have said, I by no means wish to make unpleasant comparisons, "Je ne decide point entre Genève et Rome." What I have stated merely tends to prove that candidates are not always chosen from their intrinsic merit or acknowledged reputation. You cannot but acknowledge that the works of MM. Alibert and Double are better known by the learned of Europe than M. Fouquier's Memoir on Strychnos, (the first hint of which was, by the way, given by M. Majendie) than M. Husson's reports on the propagation of vaccination, and than the articles of M. Pariset, inserted in M. Decazes's Journals—works, the merit of which, in other respects, I do not mean to question.

You have not forgotten that M. Pariset left Paris, by order of the Minister of the Interior, to observe the yellow fever which raged at Cadiz, with great violence, in the summer of

1819. In Europe, as well as in the tropics, this disease always disappears on the first approach of winter; a little trifling fact, of which M. Decazes ought to have been aware before he put the State to such an expense.

As M. Pariset was still at Madrid on the 23d of November, it is clear that he could not make observations on a disease which had already disappeared from Cadiz. The only subjects for examination would be convalescents, who are perhaps as fit to give an idea of the character of a disease, as a few stragglers, to convey an appropriate impression of the nature and strength of an army. If M. Pariset had departed three months earlier, he might have given us the result of his own observations; as it is, we shall only now have the opinions of the Spanish physicians, which would have as well been transmitted by the post. As yet the fruits of such an expensive journey are confined to four coloured engravings, published by M. Pariset, which, announced at a moment when all eyes were directed to Cadiz, excited great curiosity. We expected at least portraits of Quiroga, Riego, plans of the fortifications of La Isla, and the redoubts of La Cortaduro. It was a cruel disappointment for the curious to find three faces of men dying of the yellow fever, and fourteen isolated tongues; not tongues of eloquence and fire, but the dirty tongues of patients announcing to the eye and finger the state of the intestinal canal; and which are intended by M. Pariset to express the different phases of the yellow fever in succession. You will be surprised at this. Why? Since we class and describe diseases by the same method which botanists employ to class and describe plants, it is natural that we should endeavour to determine the characters of the former, by the aid of drawings. M. Pariset, indeed, must view diseases as enjoying great advantages in this respect; for Linnæus affirms that the colour of the corolla is too variable a quality to determine the distinction of vegetables; and our learned traveller considers the colour of the face and tongue as characteristic of dieases, in which the expression and colour of the face change from minute to minute. What will those physicians say, who have seen the yellow fever without any alteration of colour. What right shall we in future have to find fault with those who, incited by M. Pariset's example, may seize upon some favourite individual symptom, and give it as characteristic of the complaint, either the burning pain of the eyes, tension of the hypochondria, or the black vomit. One word of advice to M. Pariset. Should he continue his present plan of describing fevers by drawings, he must first get the following question resolved by some Academy of the Fine Arts. "To find the means of expressing, by painting, an abstract and complicated idea, without the aid of allegory." A disease is not a being; it is a phenomenon, or rather an union of phenomena, which may be viewed as depending on organic lesions. These organic lesions are always out of sight, and as little capable of being represented by drawings as those sensations, the existence of which is only known by the declaration of the patient.

M. Gall has commenced his annual course of craniology in the amphitheatre in the Rue St. Victor. This science is getting singularly out of fashion. Time was when M. Gall made us pay high enough for his lectures, and we had difficulty to fight our way to the door. Now we enter gratis, and there is plenty of room. When M. Decazes was Minister of Police, he greatly encouraged the science of craniology, by giving its inventer a pension of 3000 francs. M. Decazes undoubtedly found the science useful in choosing his counsellors; and if this Minister's reign had continued, the late preventive laws would have been founded on craniological principles. A subject which has more reality and practical application, is the excellent course of human anatomy which M. Beclard gives to the faculty of medicine. M. Dumeril had already greatly advanced the study of this department of anatomy, considered in a philosophical point of view. Some indeed thought that he too frequently introduced the subject of comparative anatomy. M. Beclard is more reserved on this point; but the composition and analogies of textures, the forms and relations of parts, both in a state of health and disease, suggest to him at every step a variety of interesting general observations, which enliven the dryness of anatomical discussion, and are almost all of practical application. M. Beclard, before he became professor, underwent the probationary trials, as "chef des travaux anatomiques." MM. Dumeril and Dupuytren occupied this honourable post before him. M. Breschet now fills it in a manner which will soon place him on the distinguished level of his predecessors. M. Chaussier still teaches physiology, and gives two lectures a week. This learned teacher always displays the same profound views, and the same originality of ideas. He still preserves his prejudices against the accessary sciences, which he calls "strangers to medicine," and against chemical explanations of phenomena, which he styles chimerical.

Since Professor Cuvier has become a statesman, and science is only the amusement of his leisure hours, by virtue of the number of lucrative places which this amusement procures him, there are no other lectures on comparative anatomy at Paris, but those given by M. de Blainville, at the "Faculté des Sciences." They are very well attended, and would be more so if the theatre of the College de Plessis were larger. M. de Blainville, as a savant and professor, promises to be a worthy successor of his master Cuvier, whom we trust he will follow in his Linnæan zeal for the science of nature; but we hope he will not imitate him in those pretentions to nobility, which made Buffon ridiculous though born noble, nor that in love of office, which was the misfortune of Pliny the elder, and of which M. Cuvier seems to have his share.

You are acquainted with the work which M. Geoffroy de Saint Hilaire published last year on philosophical anatomy, in which he endeavoured to bring all the types of organization to a primitive and unique form. M. Geoffroy continues to illustrate his discoveries at the College de Plessis before a numerous audience, and demonstrates that "insects are provided with a skeleton as complete as that of the large quadrupeds; that the crustaceæ do not walk upon their claws, but upon their ribs." It is a pity that man is not a lobster, for then, like our first father, Adam, we might lose our ribs without being aware of it, which would have diminished the risk which M. Richerand ran in removing those of the unfortunate Michelleau, in his famous operation for cancer. For a long time M. Richerand has published nothing but new editions of his old works —it is matter of regret; for this surgeon has great talents as a writer. The clearness of his style is admirable, and his works have been universally popular as elementary books.

Ce que l'on concoit bien s'exprime clairment.

This is not universally true, though Boileau said it, in respect to him who writes, nor in regard to him who speaks; it may be for the one without being so for both at once. M. Richerand as author, and M. Richerand as professor, are two very different persons. It appears to be matter of regret that M. Richerand should have changed his former chair of external pathology for that of operative medicine. In the latter he had to succeed M. Dupuytren. Who could stand the comparison? M. Dupuytren is perhaps the only surgeon, who with C. Bell and M. Delpech, has made it his study to teach the art of operating by showing the relation of different methods with the structure of parts, and by determining the advantage of each proceeding according to the alterations of form produced on organs by disease.

The lectures on chemistry, are of all the lectures delivered at the Faculty of Medicine during the winter, the best attended. What can I say of the professor who attracts such crowds, which you do not know, and which all Europe has not repeated? He who wishes to know chemistry thoroughly, must attend M. Vauquelin. He who wishes to see chemical facts philosophically arranged and illustrated by experiments skillfully performed, must go to the College of France, and to the Faculty of Sciences, to hear M. Thenard; but he must make haste, for it is as difficult to get a place to hear Thenard as to see Talma. Chemistry has not a more zealous cultivator—science has not a more eloquent advocate.

A new and rival school has risen by the side of the Faculty of Medicine. A generous opposition is already the result, and it will probably save the medical schools of France from the destruction which hovers over them. Indeed the school of Val-de-Grace can only yet boast of one professor of celebrity, but this teacher is endowed with real talent. He has all the enthusiasm of a reformer, and the power of communicating it when necessary. It is in vain to conceal the influence which M. Broussais already exercises, not only on the studies of the pupils, but on the practice of the physicians of the capital. As this influence is the most important fact I have to communicate at present respecting our science at Paris, I shall take an early opportunity of detailing to you the doctrines of M. Broussais. It would not be judging properly of his doctrines or practice to repeat with the public, that the annual consumption of leeches in the civil hospitals of Paris, which constituted only an expense of 2000 francs, is now 80,000. You will nevertheless have heard that M. Broussais is not so much in vogue as last year, when the Minister at War found it necessary to close the doors of the hospital to the crowd of students who besieged them. This was a wise and equitable measure. When the State admits soldiers into a military hospital, it only discharges an obligation which ought not to be accomplished with degrading conditions. The assistance, on the contrary, afforded to the indigent in the civil hospital, is an act of pure benevolence on the part of the State, which may be accompanied by such conditions or regulations as she may choose to impart. This distinction between military and civil hospitals, and its application to the education of pupils, appears to me a sufficient justification of the ministerial measure, without resorting to supposed jealousy on the part of the Faculty of Medicine, particularly when we all know the noble and loyal character of those to whom the direction of the medical service of the Val-de-Grace was confided at the time. As the doctrines of M. Broussais are of a direct practical application, the above-mentioned circumstance may have retarded their propagation. It does not much signify. If these doctrines are true, reflection and time will only serve to establish them; if they are false, it is perhaps better that the pupils should defer the examination of them until they are qualified to judge and think for themselves.

Since M. Corvisart has retired, the medical clinic of M. Broussias is the only one which has had great success. I do not know why the course of M. Leroux at the clinical institute, established at such expence in the Hospital de la Charité, should be so ill attended, whilst the students follow with such eagerness the visits of MM. Alibert, Broussais, Cullerier, Esquirol, Husson, Jadelot, and Recamier. These physicians all give clinical instruction, either of their own accord, or by the administrative council of the hospitals. The differences in the practice of these gentlemen are worth knowing; and in my following letters, I shall give you a full account of them.

In London, the physicians and surgeons of hospitals have the same opportunity of giving practical instruction. Their only remuneration, in fact, arises from the fees they receive from their students. It is to be wished that this practice were introduced into the Paris hospitals. First, it would have the effect of driving from the wards that noisy crowd of students who almost suffocate the physician in his visit, perplex and harrass the surgeon in his operations, and worry and distress the patients unnecessarily. The facility which our students have of getting into the hospitals before they have acquired information enough to observe diseases, leads them to neglect their books, and interrupts their course of study. The English method of remunerating the medical officers excites an emulation which is equally advantageous to patients and pupils, for it evidently requires greater care where the observer must constantly give an account of his motives and actions to intelligent bystanders. To get pupils, good lectures must be given. To make good lectures, diligent observation is requisite, which leads to better care of the sick.

There are some people in the world, doubtless, who wish to establish the amount of a salary upon any other consideration than the service rendered for it; but we must look to a mad-house only to see the salary increase in *direct proportion to the diminution of attendance.* In the hospital of lunatics at Charenton, the following regulation appears: " The physician shall reside in the establishment; he shall receive a salary of 4000 francs, and pay five visits a week; if he does not reside, he is to receive 6,000 francs, and pay only three visits."

Talking of the Charenton, I must give you an account of a new method of improving the salaries of physicians in hospitals where the patients pay for their board. This plan consists in assigning to the former a certain share, say two-twelfths, of the savings which are made on the sum the patient pays, rendering it of course the interest of the physicians to make this saving as considerable as possible. The salary of the physician, therefore, it is evident can only be limited by the bad intentions of a director too much attached to the welfare of the patients. This may be easily obviated. By the assistance of calumny the director is got rid of, and to prevent all future disputes, the direction of the hospital is made the marriage portion of the physician's daughter. I need not tell you that the Lunatic Asylum of Charenton is out of the administrative controul of the hospitals of Paris.

Do not forget, I beseech you, that I am writing the history of my own times from official documents. Do not boast of a law, which, to put your delicacy above all suspicion, has interdicted the practice of pharmacy. Cease to blame the pharmacomania of the English and Dutch physicians, who divide the spoils with the apothecaries; for where, either in England or Holland, will you find any thing to be compared with what I tell you? But then, it is true, neither of these countries bring up their physicians in the commissariat service.

When a man professes zeal for his profession and love for humanity, his ardour in discharging his duties is above all remuneration. At the Hotel Dieu M. Dupuytren receives a very moderate salary, which is neither directly nor inversely proportioned to the number of his visits, and which does not prevent him going winter and summer to the hospital from half-past five in the morning to ten, and again returning in the afternoon to see the patients who have been recently operated upon. Let us unite our prayers to those of the unfortunate, and hope that his health may long enable M. Dupuytren to persevere in his career of glory and humanity.

I did not intend to have here introduced the subject of clinical instruction; the mention of M. Dupuytren leads me in spite of myself to speak of his surgical clinic, which is attended by students from all parts of the world, and which is so distinguished for the reputation and talent of its present professor. We have three surgical clinics at Paris; each has a different character, and the three form together nearly a complete course of clinical instruction.

At the Hotel Dieu, M. Dupuytren, before performing an operation, establishes, in presence of a numerous audience, the causes which indicate it; he discusses the methods of operating employed by surgeons, and describes the one at length which he is about to put in force. The pupils are called to no consultation or conference; those only who are attached to the service of the hospital are employed in collecting the observations. The morning of Sunday is devoted to reading them in public, and correcting errors of fact or theory.

At the Charité, MM. Boyer and Roux alternately take charge of the clinical department. M. Boyer examines the house pupils on the patients entrusted to their care. The professor discusses the most important cases, and displays all that profound knowledge and practical ability which have long ranked him amongst our first surgeons.

In my opinion, M. Dubois clinic, at the "Hospice de la Faculté," is that which approaches nearest to perfection. Clinical instruction consists more in deed than in precept, but that the former may produce a salutary effect on the pupils, the professor must give an account of the motives which actuate him, and which can only be done where the patients are limited. In this hospital there are only forty beds, and the patients are selected with great care. M. Dubois can therefore devote to each patient a sufficient time to establish the diagnosis, and answer the questions which each pupil has a right to address him. In the theatre the professor enters on the cases which have been operated on, or those which are about to take place. The operation is then performed, after which M. Dubois sees the out-patients. Here he applies public instruction to private practice, and presents us in part with the advantages of those private establishments which in Germany are called "clinica ambulatoria."

M. Dubois is really indefatigable; to the experience of age he joins the ardour of youth. Charged with the instruction of female midwives at the "Hospice de la Maternité," he has just commenced a public course of lectures on midwifery for medical students. These lectures will be quite an epoch, and unfortunately they will be the last which M. Dubois will give on a subject which requires more to be reduced than extended. Who will be better able than this learned surgeon to reduce to their proper value the pretensions of those surgeons, who have only become great accoucheurs because they were not fit for any thing else.

M. Roux has repeated with success, but in consequence of an accident which was unconnected with the disease, the beautiful operation of the suture of the velum palati, which he was the first to practise, upon an American, who had had a congenital division of this musculo-membraneous part. Some months ago, at the Royal Academy of Sciences, the subject of this operation, whose voice before was hardly perceptible, read his own case very distinctly.

Our summer lectures are going to commence; and next month we shall have the pleasure of hearing those lectures on mental legal medicine, which, according to the letter of the President Royer Collard to M. le Roux, are to be the honour of the Faculty and of France herself. During a year, Doctor Royer-Collard, says he, in spite of his laborious three visits a week to Charenton, has prepared six lectures of the course; so all hope is not lost.

I am, VERIDIQUE-ALLEYES-ALLEARS.

Hydrocephalus Chronicus treated by Operation. By JOHN LIZARS, Esq. F. R. S. Fellow of the Royal College of Surgeons, and Lecturer on anatomy and Physiology, Edinburgh.

(From the Edinburgh Medical and Surgical Journal for April, 1821.)

> " Operations strike a deeper interest into the public mind than the daily cures we perform. The passion of acquiring character in operations is surely full of danger."
> —JOAN BELL.

EVER since my attendance on Monro Secundus' Lectures in 1805, I have reflected on the possibility of curing this dreadful malady by operation.—" Innumerable children are cut off, and whole families made desolate, by effusions into the cavities of the brain." Dr. Monro, who, to the talents of a scientific physician, united those of a consulting surgeon, suggested in his Lectures a method for evacuating the fluid secreted in this disease. He has likewise mentioned a case in his work on the nervous system, where he recommends evacuating the water, provided it is effused between the dura mater and the surface of the brain, for he considered it, at that time, imprudent to pierce the substance of the brain. On opening the dura mater with a lancet no fluid flowed, therefore the operation was abandoned. Monro's observations on this operation are deduced from its history. He cites cases from Ferdinandus, Fabricius, Panarolus, Wepfer, Muraltus, and Le Cat, and states, that, "within a few hours after the operation, every one of their patients died!" He, therefore, concludes, "When we consider the various dangers which must arise from the puncture of the substance of the brain—from the unequal bending pressure, and, perhaps, laceration of parts, which must happen when the brain collapses—from the admission of air—from the impossibility of adapting the cranium exactly to the brain for its support by the application of any bandage—no prudent surgeon will embark himself in such an attempt,—'ne quem servare non potuit, occidisse videatur.'" However plausible these observations are—however forcible they appear from their deduction from the history of the operation—however appalling from such imperious language, coming from so great authority—I have ever considered them as unstable and inconclusive. Even Dr. Monro himself thought differently in 1805 to what he wrote in 1797, for he proposed evacuating the fluid within the ventricles from the occiput. To the ancient authors, mentioned by Monro we may oppose Hippocrates, Paulus Aetius, Albucasis, and Arantius.* Fortunately, in the early career of my profession, I had equal authority to oppose to this reasoning of Monro. My late deeply-lamented preceptor, Mr. John Bell, had taught me, "that the brain, in its own nature insensible, may be piece-meal destroyed without the faculties being ruined; that no local injury offends; that the faculties are obscured by such causes only as effect the whole; that the slightest general injury produces the worst symptoms, the most desperate local injuries none." Of the truth of these assertions we have only to consult his scientific work on Surgery, Vol. III. and the surgery of Wiseman. I had also the good fortune to witness several cases of injury of the brain—the one of the boy related by my partner, Mr. Allan, in his first volume of Surgery, page 417, I had the daily task of dressing. The first assertion of Monro, therefore, is groundless; equally so are the others, as the case will prove.

Convinced of the probability of success in curing this disease, particularly when taking into consideration the analogy of the cure of spina bifida, and other dropsical affections, and finding that the authors quoted by Monro had either only heard of the operation having been performed, or when they were eye-witnesses, that the fluid was evacuated at once,* I proposed in 1815, to a medical gentleman, on whose opinion I place the highest value, as he is intimately acquainted with the history of his profession, and has witnessed extensive practice, to put the operation to the test on a child of a lapidary in town. He, however, dissuaded me from it, as being a rash attempt. "What should have been done for the hundreds of patients whom Morgagni and Valsalva suffered to die without help? Are we to offer no chance for life, when there is nothing but despair? Can the surgeon be said to destroy by his operation a patient who is declared past all hope? Can a patient suffer greater agony than convulsions, or be worse than dead?"

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* "Et licet Arantius libro de tumor præternatur, contendat nunquam esse deveniendum ad incisionem in hoc affectu, tamen ipse recedit gratis a magno Hipp. 2 de morbis, Paulo Aetio, Albucasi incisionem commendantibus."

Last summer, I mentioned my ideas on the subject to my friend Dr. William Campbell, Lecturer on Midwifery, whose extensive practice in the diseases of children enables him to form a correct opinion of this complaint. He immediately concurred, and mentioned that there was a case related in the Medico-Chirurgical Transactions, by Dr. Vose of Liverpool, which had been successful. Accordingly, in December last, he called me to visit a child afflicted with this disease, which he had been most judiciously treating, with a hope of being able to cure it without an operation. He had purged it briskly with calomel, and had applied repeatedly blisters to the nape of the neck and along the spine, and used mercurial frictions, but all to no purpose. The little one, a female child of the name of Elizabeth Davidson, was born about four months and eight days ago, of healthy parents, and apparently in sound health herself, as Dr. Campbell testifies, who attended the mother during her confinement. But, in six weeks after, she was attacked with epileptic fits, which were shortly after followed by strabismus and an idiotical look, accompanied with torpidity of the bowels. The head soon evinced the deposition of water, and confirmed my friend, Dr. Campbell, in his conjectures that hydrocephalus was forming.

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*Wepfer, in the detail of one of his cases, says, that the mother of the child went away indignant at the advice which he gave her not to allow the head of her child to be touched; and that he heard of a surgeon who had been bold enough to operate, and the child died. In another case all the water was evacuated in twenty-four hours.

Fabricius, who is very imperious in his language, in one case thus expresses himself:—"After some months, chirurgum juvenem ingeniosum tamen satis, in consilium adhibuerunt." This young surgeon cut the right bregma, (I imagine one of the posterior,) and extracted at once about a pound of clear water. He then applied a pledget, and stopped the wound with a plaster. But the head was so turgid with water (for the disease had been allowed to go on for nine months) that it continually flowed copiously until the child's strength became so debilitated that in thirty-six hours it died. "Vides itaque vir clarissime, (ait) quam periculosa sit apertio cranii et evacuatio aquæ hydrocephalis, idque non immerito." He mentioned, that, in two cases, he found the water within the ventricles, and satirically adds, "Hæc autem absque mortis discrimine fieri non posse, etiam tyrones norunt,—imprudenter itaque agunt illi qui in hydrocephalis multa promittunt, sectionemque tentant." Such dictatorial language is contemptible; and of all melancholy contemplations, the practice of the ancients is the most afflicting.

Ferdinandus agrees with Hippocrates, "Si non sanat medicamentum, sanat ferrum, et quod non sanat ferrum sanat ignis."

Le Cat, in his operation, allowed the canula to remain in the wouud during the treatment.

7th December 1820.—The head, or, more correctly, the cranium, appears double the size of its natural magnitude; the superior sides of the parietal bones, where they form the sagittal suture, are so far removed from each other as to nearly admit two fingers; the frontal bone is equally removed from the parietal bones, and the halves of the frontal bone itself are also equally apart from each other; all contributing to constitute a very large bregma, or anterior fontannelle. The posterior fontannelles are proportionally enlarged by the separation of the temporal and occipital bones. The countenance has a disagreeable appearance: the unproportional forehead—the squinting and rolling of the eyes, with the largely dilated pupils—and the moving the enormous head from side to side—present an idiotical, melancholy scene.

10th.—To-day, in presence of Dr. Duncan, junior, Professor of the Theory of Medicine, Dr. Campbell, and one of my pupils, Dr. Moore, I pierced with a couching needle the interior fontannelle in the angle, on the right side of the superior longitudinal sinus, carefully avoiding any cutaneous veins. From the coniacl figure of the needle, only about a tea-spoonful of fluid exuded. A cathartic was administered.

17th.—Nothing occurred from the puncture on the 10th. To-day, in presence of the same gentlemen, I pierced the same angle of the fontannelle with a delicate trocar and canula, and allowed to flow from four to five ounces of a clear, limped fluid, stopping the flow in the middle for a few seconds.* The sides of the cranium were supported during the flowing of the fluid by the hands of an assistant. The head was afterwards bandaged. By this manner of proceeding, we avoided the other dangers, excepting the admission of air, of which hereafter, mentioned by Dr. Monro. The pupils instantly contracted, and the strabismus ceased. The child was given to the mother, with directions to keep the head in the horizontal posture, the same attitude in which it had been during the operation, viz. across the knees. She sucked greedily immediately after, and slept calmly in the evening. A cathartic was desired to be given, and the mother requested, in the event of seeing any flushing of the countenance, or restlessness, to immerse the child in the warm bath, up to the arms.

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* The following is the analysis of this fluid by my friend, Dr. Fyfe, Lecturer on Chemistry: The results of the experiments are,

A. On the addition of nitrate of silver, a copious white precipitate fell, which became black on exposure to light.

B. Nitrate of baryta also gave a white precipitate, insoluble in nitric acid.

C. Oxalate of ammonia rendered the fluid turbid, but ammonia itself did not occasion a precipitate.

Tuesday the 19th.—Slept sounder, and passed a better night, between Sunday and Monday, than since she was born. Has passed an equally good one this last night. The head appears as large as on Sunday, and the squinting and dilated pupil have returned.

Thursday, 21st.—Yesterday, Dr. Campbell was sent for, and he found a good deal of pyrexia present, with vomiting. The head appeared as distended as at first, and the reaccumulation seemed to be the cause of these symptoms, as the rest of the case will show. He ordered two leeches to each temple, a cathartic to be given, and the lower extremities to be immersed in warm water. To-day, we proposed repeating the operation, but the parents would not listen to it.

Monday, 25th.—The child having been easy for two days, and the parents having given their consent, I repeated the operation, and extracted four ounces of fluid. To-day, I introduced the trocar on the left side of the fontannelle; but, not having pushed it deep enough, the fluid did not flow so freely as formerly. In general, I introduced the instrument an inch from the integuments, but, to-day, only three-quarters. To prevent irritation being caused by the reaccumulation of the fluid, we appointed

Thursday, 28th.—Immediately after the last operation, she

D. On the addition of lime-water, a white precipitate fell.

E. Muriate of mercury produced a copious precipitate.

F To the filtered fluid of E. infusion of nut-galls was added, and no precipitate was occasioned.

G. Sub-acetate of lead (Goulard's extract) produced a copious precipitate.

H. On the application of heat, a coagulum was formed.

Of the above experiments,

A. indicates muriatic acid; B sulphuric acid: C. lime, and the absence of magnesia; D. that lime is in union with phosphoric acid; E. and H. indicate albumen: F. the absence of gelatin; G. the presence of mucus.

The specific gravity of the fluid was, at 50 Fahrenheit, 1011.06; compared to water, 1000.

This fluid then appears, concludes Dr. Fyfe, to be the same in its composition as the other watery fluids of the body, containing albumen, muriates, sulphates, and phosphates.

vomited. The bandages was allowed to remain until to-day. There did not appear any reaccumulation.—The operation, however, was repeated, and between five and six ounces were removed, which caused considerable collapse of the bones and integuments, and the child vomited. The bandage was applied as usual. From this day, a marked amendment took place: she sucked well, became more regular in her alvine evacuations, and slept sounder; could see distinctly, had a more natural physiognomy, and cried louder.

Sunday, 31st.—The operation was to-day again repeated, and about four ounces of fluid abstracted.

Friday, 5th January, 1821.—Yesterday morning the same epileptic fits occurred, as at the commencement of the disease, and apparently from the fluid irritating the brain by distention; the warm bathing of the lower extremities was prescribed by Dr. Campbell, and a cathartic, after which no fit took place. The operation was repeated on the right side, and four ounces of fluid withdrawn; no vomiting followed this time.

Tuesday. 9th.—On Sunday last the 7th, she got the two mesial incisors of the lower jaw. Yesterday morning she had two epileptic fits of short continuance, and a third a little while before we called. The head was considerably less, and the anterior fontannelle greatly reduced—the anterior portion of the sagittal suture ossified, and where I had first punctured, was now bone, partly from ossification, and partly from the approximation of the frontal and parietal bones. The operation was done on the right side, and seven ounces of fluid evacuated. No vomiting followed.

Sunday, 14th.—On Thursday last, she had one or two slight epileptic fits. She was ordered half a grain of calomel night and morning, to induce absorption. To-day I pierced the fontannelle on the right side, and abstracted 7½ ounces of fluid, of a much darker colour, and of a thicker consistence. In consequence of the bones being now firmly united, pressure could not be used, and *air rushed in at the canula*. This last fact answers the remaining assertion of Monro.

Friday, 19th.—On Tuesday the child had several slight fits. This day I took away seven ounces of fluid, of the same dark colour. When I punctured, the air escaped with a hissing noise. I applied compression over the fontannelle.

Tuesday, 23d.—Fits attacked her again on the second day after the last operation. To-day, I could procure only two ounces six drachms of fluid, and during its flowing the air rushed in. As the calomel had purged the child rather too severely, it was left off.

Sunday, 28th.—To-day I drew off ten ounces of fluid. On Tuesday evening following, she was attacked with the fits, which continued at intervals till Wednesday morning. Ordered the warm bath and a brisk purge.

Sunday. 4th. February.—She had no fit since Thursday; to-day I pierced on the right side, and evacuated three ounces and a half of fluid.

Thursday, 8th.—To-day I pierced on the left side, in the very same direction and manner as on any former occasion, but no fluid flowed; I moved gently the canula on every side and passed a probe along, which met with a soft resistance, and on examining the point a little serum was evident. On withdrawing the canula, no cerebral matter or any thing appeared within. No bad symptom followed this punctured wound, or the following.

Sunday. 18th.—To-day, conceiving there was a reaccumulation of fluid from the fluctuating feel, I made another fruitless attempt; even Dr. Duncan and Mr. Allan were equally deceived; nothing seems so difficult to acquire as the *tactus eruditus*, and nothing is so essential to a surgeon. There was more resistance in this puncture; a particle of cerebral matter was found at the wound and a little within the canula. A little blood dropped from the canula, while in the wound.

Sunday, 25th.—After the result of the last operation, I considered the child as cured, but Dr. Duncan and Mr. Allan's prognostications were too true. For these two days past the child has been very fretful, crying night and day. Fluctuation was more evident than at our last meeting, and I therefore punctured on the right side; the fluid instantly flowed; but no more than four ounces were removed. The child was immediately relieved, and continued better. On Wednesday 28th, I repeated the puncturing, and took away five ounces.

Saturday, 3d March.—To-day, I first punctured on the left side, but no fluid flowing, I secondly punctured on the right, and obtained three ounces of fluid. This leads to the inference, that the left lateral ventricle, or the left side of the general cavity, is obliterated, I should suppose, by adhesion.

Tuesday, 6th.—No bad consequences whatever followed the double puncture. To-day, I punctured on the right side, and removed four ounces of fluid.

Saturday, 10th.—I was sent for this morning, and I found that the child had had several fits early in the morning. The fontannelle is puffed up, indicating a reaccumulation of the fluid. The gum over the incisive teeth of the upper jaw is inflammed and swollen. This I accordingly scarified, and then punctured the fontannelle on the right, and removed four ounces of fluid.

Tuesday, 13th.—The child has had no fits since Saturday, and every thing promises success, but we appear to make little progress, in consequence of the irritation of the teething.

This case illustrates several important facts. It shows us that hydrocephalus chronicus may be treated by operation, when cautiously managed—that the brain, the centre or origin of the nervous system, is insensible, as Wiseman formerly proved—that it is at the commencement of the deposition of fluids in the brain that irritation is induced—that when a large quantity is extravasated, provided it be gradual, the brain accommodates itself to the fluid, and no urgent symptoms occur, but only those which are the result of general pressure, as gradual paralysis. The next point to be considered, and of which this case is a strong analogical illustration,—is the propriety of operating in a similar manner in the acute hydrocephalus. I merely at present hint at it, and shall certainly reflect seriously upon it. I have been years before bringing the operation in the chronic to the test of experiment; the same time may elapse before the other be decided.

The gentlemen who have witnessed this case, in one or more of its operations, I beg to mention, as I find many scrupulous to believe that any operation has been done. "Truth scarce ever yet carried it by vote, any where at its first appearance. New opinions are always suspected, and usually opposed, without any other reason, but because they are not already common. It is trial and examination must give them publicity." Dr. Duncan, jun. Professor of the Theory of Medicine, Mr. Allan, Lecturer on Surgery, and one of the Surgeons of the Royal Infirmary; Dr. Campbell, Lecturer on Midwifery; Dr. Milligan; Mr. Runciman, N. S.; Mr. Scott, N. S.; Dr. Moore; Dr. Murphy; Mr. B. Bell; Mr. Tweddale; Mr. Carnie, Surgeon, and several young gentlemen, pupils, either of Dr. Campbell or myself.

6, *George Street*, 13*th March* 1821.

SELECTED REVIEWS.

Cases illustrative of the Treatment of Obstructions in the Urethra, &c. by the New Instrument the Dilator; with further Directions, to facilitate its General Adoption: also, a Case of the Extraction of Stone from the Male Bladder without cutting it, by the Dilator; with an Account of Improvements of the Method of Dissolving Stone by Injection, and of the common Operations of Lithotomy. By JAMES ARNOTT, Member of the Royal College of Surgeons in London. 1 vol. 8vo. pp. 119. London 1821, with a plate.

(From the Medico-Chirurgical Review for March, 1821.)

IN one of the numbers of our *Quarterly Series*, we gave some account of Mr. Arnott's dilator; and we have heard favourable reports of it since that period, both in this country, and on the continent. In the present publication, our author delineates certain improvements in the instrument itself, gives minute directions for using it, and recommends an extension of its application.

Our author remarks that the process of destroying stricture in the urethra, by means of caustic, is now totally relinquished, " from the experienced difficulty of confining its action to the stricture alone; and from the severe pain, irritation, and danger occasioned when this is not accomplish." *Dilatation* is, therefore, the remedial measure universally resorted to; but to the *action* of the instruments commonly in use Mr. Arnott objects, as being that of the wedge—" and thence they have four radical defects."

" The first of these which I shall notice, and which proceeds from the necessity of pushing forward the instrument when it is at, or in, the stricture, to dilate it, is, that the urethra is often pierced by it before or behind the stricture, causing hæmorrhage, false passage, and urinary abcess; or, which is productive of similar effects, the stricture is torn from its situation, and carried forward on the instrument. These misfortunes are particularly liable to occur when much force is employed to dilate, either for the purpose of opening a common stricture very quickly, or when a hard stricture will not yield at all to milder measures. The second defect is, that, from this progressive motion being necessary to the dilatation, much needless pain and irritation are produced by the friction of the instrument upon the tender parts as it advances. A third great defect of these instruments, from their being unchangeable in dimension, is, that, as the orifice of the urethra is of smaller diameter than the rest of the canal in its healthy condition, it cannot readily, or without much irritation, admit an instrument of sufficient size to dilate a stricture behind, to the level of the canal there; and as stricture not sufficiently dilated, commonly returns on intermitting the process of distension, a permanent cure is thus not obtained. The fourth defect is, that such an unchangeable instrument cannot act equally on the whole of a long stricture, or on several co-existent at once." P. 3.

It appears to us that the above objections to bougies, &c. are by no means imaginary, whether the dilator be free from them or not. Mr. Arnott thinks it is free from them all; and for the following reasons.

"It consists of a strong, air-tight membranous tube, as of oiled silk lined with thin gut, about an inch and a half in length, which is introduced into the stricture in its empty or collapsed state, and is then filled to the necessary degree of pressure, with air or water, from a syringe without; and is again emptied before being withdrawn. The dilator, while opening the stricture, remains precisely in the same position within it; so that however strongly its action may be required or exerted, even when an old stricture is completely opened by it at one application, it cannot possibly, like bougies, either pierce the urethra or tear it. As it is introduced in its shrunk or collapsed state, no painful or injurious friction is then occasioned. And, from its being changeable in dimensions, it will enter an urethra with the narrowest orifice, and still dilate a contraction in any part, to the natural size, or beyond that if necessary, without stretching, like the bougie, the whole canal anterior to it. For the same reason the dilator acts equally on the whole of a long stricture, or on several strictures at once." 4.

Mr. Arnott next enters into a particular examination of the advantages and disadvantages above enumerated; for the details of which we must refer to the volume itself. But the author having kindly lent us the plate to work off impressions enough for this number of the Journal, we shall here give a slight explanation of the figures, which may possibly enable those of our brethren in foreign countries and the colonies, who have no means of procuring the work or the instruments, to construct them themselves.

"Fig. 1. Represents, in its distended state, a common urethra dilator of size No. 14. The part which acts upon the stricture is the short tube of strong silk, A, when distended. This is lined with thin gut to make it air-tight, and covered with the same, or with varnish, to make it smooth for passing down. One end of it is tied upon the extremity of the directing wire C, and the other upon the extremity of the tube or cannula, B. The wire C, which runs through, and projects beyond the cannula B, serves to conduct the dilating tube in its collapsed state into the stricture, and by the cannula, the distending fluid, air or water, is injected from the syringe D. The stop-cock E, screwed into the outer end of the cannula at F, retains this injected fluid.

"Fig. 2 represents the skeleton of part of the dilator, without the distensible tube, that its construction may be better understood.

"The cannula B may be of the common elastic catheter tube, or of tin, which is flexible, or of silver. To its outer end at F, is fixed, by cement, a small connecting piece of brass, to receive the corresponding screw end of the stop-cock E, or of the syringe D, when only momentary distension is made, and the cock therefore is not required. At its other end, (fig. 2,) it is represented as roughened, that the silk and gut tube may be more securely attached to it.

"The wire C, (which is represented by the dotted line in fig. 1.) is of silver, prepared so as to be elastic, as small as the necessary degree of strength will permit, and sufficiently long to project from both ends of the cannula; from the inner end, as much as the length of the distensible tube is required to be, and about one-fourth of an inch at the outer end, where it has a knob on it, or hook, to prevent the possibility of its slipping from the tube, and being left in the urethra. At its point (fig. 2,) there are two knobs or risings, between which the silk is tied on; one constitutes the point of the finished instrument, and is one tenth of an inch in thickness, that it may pass easily; the other, a quarter of an inch distant from it, is merely large enough to prevent the tying from slipping back upon the wire. The wire is freely moveable to and fro in the conducting tube, for several reasons, such as to facilitate the tying on of the silk, so as not to leave it twisted, and that the silk tube be neither too slack nor too tight on the wire. That the surgeon may be able, however to direct the point of the wire to the opening of the stricture, the whole should receive the double or S curve, natural to the urethra, as is shown in the plate." 23.

The syringe D is a brass forcing syringe, three inches and a half long, and half an inch in external diameter.

"For ordinary cases of stricture, the distensible tube may be constructed of strong silk ribbon, with the edges sewed together, and having its seam turned inwards, lined and covered with thin gut. Such a tube will in every instance be found of sufficient strength to bear the requisite degree of pressure. The greatest pressure of the thumb upon the piston of such a syringe as has been described, will merely rupture it, and this force is more than the hardest stricture can for a moment resist. When little bulk in the dilator is desirable, as in the very beginning of the treatment, the thinnest oiled silk, lined with a gut, will be preferable; but as this will often give way to great pressure, it is proper previously to ascertain how much it can resist, and to point this out by a mark or check on the piston rod of the syringe. Besides the loss of the distensible tube from such an occurrence, there is a chance of injury to the urethra from the lining gut then protruding forcibly through the breach in the silk. In some very narrow strictures I have even used at first, merely a bit of single or double gut without a covering of silk at all; but besides the want of strength in such a tube to bear any useful degree of pressure for hard strictures, it soon enlarges from the moisture, and is thus apt to distend the sound as well as the contracted parts of the canal. It is possible that some kinds of gut may be naturally, or by preparation, sufficiently strong to bear momentary useful pressure, yet this is not particularly desirable, for although such a tube might be simpler, it would not endure by any means so long as that of silk; and a silk tube dilator, of moderate diameter, when collapsed, is as small as the smallest point that can safely be introduced through a stricture. The dimensions of the silk tube will vary of course according to the circumstances of the case in which it is to be employed. If several strictures are to be dilated at the same time, and if they are situated in the curved part of the urethra, the distensible tube must be long, and corresponding to this curve; but on ordinary occasions it should seldom exceed two inches in length, and then the curve is unnecessary. The regulation of the diameter of the dilator will be afterwards noticed.

"The gut which I have preferred for these purposes is that of the cat. When prepared, by stripping off the outer fleshy coat and inner villous one, it is exceedingly thin, and yet sufficiently strong. That the gut may be completely supported by the silk tube when distended, it must be at least of equal dimensions with it; and it is well to insure this by choosing it of larger size. When the stricture will admit an instrument of considerable size, as in stricture of the rectum, in order to preserve the dilator long air-tight, the lining gut may be double. When the silk has a covering of gut, which, on several accounts answers better than varnishing it, this outer gut must be pierced in several parts, in order that any of the fluid escaping from the inner gut may have free escape into the urethra, and not distend the covering beyond the silk.

"The only part of the preparation of the dilator requiring nicety of execution, is the attachment of the distensible tube to the conducting tube and wire, which must be at once very neat and very secure. The silk tube and lining gut should be tied on together, the artist taking care that the wire be kept exactly in the axis of the tube, or that the wrinkles or folds at the extremity be equal all round. The tyings may be made conical by notching the extremity of the silk after two or three turns of the small strong waxed silk thread have been made round it, and by then continuing the thread completely over it. The tyings should then be smoothed by a coating of bougie wax, and if unvarnished silk has been used, the operation is completed by covering both the silk and the tyings with a bit of gut. The secure attachment of the distensible tube to the cannula and wire is a matter of great importance; for, should the silk become detached in the canal beyond the stricture, it might happen, that the combined action of the urethra and the flow of urine would not be able to expel it, until the stricture were fully dilated; it behoves, therefore, the instrument maker and the surgeon, to be careful that there exist no such hazard. The accident would prove great negligence.

"The gut must be wet during the preparation of the instrument, and at each time of using it, to prevent its cracking, or the escape of the air under the dry and shrivelled tyings. After use, the water must be as much extracted as possible, and then it should be inflated and put aside to dry. This prevents the rotting of the gut. When the distensible tube consists of unvarnished silk, lined and covered by gut, it is more easily both dried and moistened, than when varnished silk is used." 27.

After thus describing the instrument itself, our author comes next to the mode of application. One difficulty experienced by surgeons at first is, to know when the distensible tube is exactly in the stricture. Careful previous admeasurement will in general ascertain this, or a part of the outer extremity of the tube may be enlarged, in the form of a button, which in introduction, will be stopped there, and shew the stricture.

The distensible tube being within the stricture, the syringe is to be applied, and "continued gradual pressure is best made by injecting air, the elasticity of which continues the dilatation as the stricture gives way, and yields to any momentary violent spasm of the parts; and more is afterwards injected, or part allowed to escape by the cock, according to the patient's sensations. If the dilatation is intended to be sudden and momentary, then the injection of water will, on several accounts, be preferable to air." 30.

Our author thinks that, in the greater number of strictures, *momentary and considerable* distension by the dilator is the best method of treatment, and gives less uneasiness to the patient than any other.

"The distension is exclusively confined to the hard, and often nearly insensible contraction, and the short stay of the instrument in the canal, occasions no painful spasm or irritation from the ineffectual attempts of the urethra to expel the foreign body." 31.

Nevertheless he prefers, in general, to accomplish the distension by several applications, rather than by one. "Gradual continued dilatation is generally the best plan when the stricture is of the long species." In these cases, a variety of size in the dilator, though not absolutely necessary, is more adviseable than using but one size throughout. In respect to repetition, it is best to allow the irritation arising from the preceding application to nearly subside, before the dilator is re-applied. Two or three days of interval will be the least that can be allowed. A dilator measuring, in its distended state, one-third of an inch in diameter, is, our author thinks, about the natural average of the urethra. "and if the stricture has been *quickly* distended to this extent, it will probably, in most cases, be permanently so distended." Its introduction may be gradually left off, or the patient may be instructed to use in its place a large bougie for the same period.

Here our author details eight cases of stricture of urethra, treated by the dilator, and one case of stricture of the rectum. For the particulars of the former class we must refer to the work, the principal features of the latter case we shall here insert. Mr. Arnott prefaces the case with some observations on the superiority of the dilator, in intestinal strictures, over the bougies in common use.

> "The dilator, which is introduced within the stricture, and again extracted, in a soft, pliable, collapsed state, which can act equally on any length of obstruction, which may carry the dilatation to any extent without ever at the same time keeping the frequently irritable sphincter of the gut distended, is obviously far preferable to any other means that has been employed for the same purpose." 73.

In the following case the bougie could not be used, owing to the great irritation caused by its friction. A gentleman of delicate reduced habit had frequent desire to stool, at which time he voided, with pain and straining, a small quantity of fæces, of a worm-like form, and generally mixed with mucus. Distressing tenesmus followed each stool, and he was troubled with flatulence, nausea, and inappetency. About three years ago his surgeon detected a stricture about three inches up, which admitted a small bougie, but the operation of passing it was always so painful, and followed by so much irritation, that he was obliged to intermit it for weeks. The gut, to the feeling, appeared pretty regularly constricted, and no other stricture could be felt.

"I introduced a rectum dilator, measuring, when inflated, two-thirds of an inch in diameter, and, comparatively, with the bougie he had formerly employed, it went very easily. I inflated it as much as the patient's feelings would allow of. After fifteen minutes, the air was allowed to escape, and the instrument was extracted." 75.

On the third visit Mr. A. introduced the dilator, but could not keep it in so long as before, in consequence of the urgent desire to stool. A watery solution of opium was thrown up the rectum. After this the dilatation went on but slowly till the ninth day, when it was retained nearly half an hour. In six weeks the contraction was removed—the bowels had greatly recovered their natural functions, and Mr. Arnott left off attendance.

STONE IN THE BLADDER.

At page 79 of the work before us, Mr. Arnott enters into a short criticism on the present methods of operating in lythotomy—gives some account of new securities against several of the dangers attending these operations—and describes a new method of injecting for the solution of stone, together with a case of stone extracted by means of the dilator.

We shall pass over our author's observations on the internal use of lithontriptics, since little is now expected from such medicines, excepting as correctives of the calculous diathesis.

The idea of dissolving stones in the bladder, by means of solvent menstrua injected into that receptacle was eagerly seized by chemists, and many of Fourcroy's experiments shew that small uric acid calculi may be softened and dissolved, in a few days, by immersion in watery solutions of alkalies so mild as to be swallowed;—while calculi composed of the earthy phosphates may be still more quickly dissolved by the nitric and muriatic acids diluted so as to be no sourer than lemonade, and hardly more acrid than the urine itself. Dr. Marcet mentions the case of a person in St. Thomas's hospital, where a lithontriptic injection, consisting of 23 drops of muriatic acid to four ounces of water, was repeatedly used, and retained for upwards of an hour, without producing the least inconvenience. "This is a quantity of acid, says Mr. Arnott, double of that which, in conducting some experiments on this subject, I found very rapidly to dissolve an earthy calculus immersed in it." Mr. Arnott thinks that, under all circumstances, it seems extraordinary that the practice of injections should have been totally relinquished. The reasons, he imagines, may be sought, first, in the exceedingly imperfect method of injecting the bladder, hitherto practised —and secondly, the difficulty of ascertaining the kind of calculus in the bladder. The latter difficulty might be got over, if the smallest particle of the stone could be procured—and he thinks it might be procured in the following manner:—

> " When the stone comes to the orifice of the bladder, let an open-pointed catheter (having of course a ball-ended wire filling it during the introduction) be passed till it touch it, and by this a small circular saw, like that of the trephine, may then be introduced to grate off from the calculus, by a few turns, a sufficient quantity of dust for examination." 85.

The method of injecting hitherto has been to throw a large quantity, at once, of the solvent into the bladder, there to remain as long as the bladder will bear it, repeating the process according to the sensibility of the parts. The great defect here is, that the solvent cannot remain in contact with the stone, in a state of purity, owing to the constant descent of urine from the kidneys, which dilutes it, or possibly renders it inert. To obviate this defect, Dr. Neil Arnott contrived an apparatus called the double catheter.

> " The double catheter may be made of metal, or of elastic gum. When of metal, it is formed by running a partition along a common catheter, so as to divide it into two channels, which open near its point, by distinct holes of the usual size. By one of these channels liquid may be passing into the bladder while it is again escaping, mixed with the urine, by the other. When of elastic gum, it is formed by inserting a small catheter into a larger one, and using the first for the injection of a fluid, while the latter allows it again to run off. In either construction separate flexible tubes must be attached to the outer extremities of the divisions or catheters, as prolongations of these; one, to connect the catheter with the reservoir from which the fluid is to enter by it, the other to carry off the waste fluid and urine to a fit receptacle. This apparatus has other obvious applications in affections of the bladder, besides that of dissolving stone. It is well adapted to relieve irritable bladder, in a great variety of cases in which it occurs, by allowing the acrid urine to run off immediately on descending from the kidneys, while any bland or medicated liquid may be kept circulating in the apparatus, and occupying the bladder in the desirable quantity instead of the urine. Again, it enables us to dilate a contracted bladder; a fluid column of any height may be made to act upon the bladder for this purpose, by varying the altitude, in

relation to the patient, of the reservoir and extremity of the waste pipe." 88.

The double catheter will enable us, our author thinks, to place the stone in an uninterrupted stream of its proper solvent, which, however weak it may be, will still have an effect, and there will then be no temptation to risk irritating the bladder by a solvent too strong.

Mr. Arnott has relieved irritable bladders by letting the circulation of warm water go on through the double catheter, during the sleep of the patient. With this instrument, there need never be more than a few drachms of fluid in the bladder, so that the stimulus of distension will never occur.

We shall pass over a proposal which our author has made to introduce an apparatus into the bladder and round the stone, so as to admit of strong solvents being injected round the calculus. We fear the apparatus is too complicated ever to answer the purpose; at all events, we refer to the work itself for the particulars.

At page 96 Mr. Arnott commences his observations on the operation of lithotomy.

> " The chief circumstances upon which the fatal terminations of lithotomy depend, are the following:—
>
> First, Exhaustion of the powers of life from the pain of the operation.
> Second, Profuse hæmorrhage.
> Third, Violent inflammation.
> Fourth, Protracted irritation, from an unhealthy state of the wound." 97.

The first is comparatively rare. The third circumstance, violent inflammation, is by some considered to be by far the most common occasion of death, whether arising from the violence done to the parts necessarily divided—the action of the urine on the new surface—or its insinuation and lodgment among the adjoining parts. Before stating Mr. Arnott's means of obviating these dangers, we shall introduce here some observations made on this subject, in the ninth number of the "*Quarterly Journal of Foreign Medicine*," which appear by some notes, letters, and expressions, to be obviously from the pen of Mr. Shaw, demonstrator and lecturer on anatomy in the school of Windmill Street.

The writer states that he assisted a gentleman in the country to perform lithotomy on a hale, stout man, 50 years of age. There was very little hæmorrhage during the operation, but towards the evening a slight bleeding took place. In the evening visit, the operator was persuaded by a surgeon present *to put a compress on the wound*, which was fastened by a T bandage. "In the morning the scrotum was found puffed up. In three days it was gangrenous, and the patient died, as one with effusion of urine in consequence of rupture of the urethra." The reviewer observes that the cause of this effusion is too apparent to require comment.

The next case brought forward, is that, we believe, of the late eminent actor, Mr. Rae, of one of the London Theatres.

As his case excited considerable sensation, we shall be a little particular in stating it. The patient's sufferings, prior to the operation, were excessive, and he bore the operation itself with the greatest fortitude. There was some difficulty in introducing the staff, in consequence of a stricture, "but the cutting part of the operation was done with great rapidity," by, we believe, Mr. Charles Bell. "There was very little injury done to the sides of the wound in the extractions of the stone, as it was so sandy a calculus that it was brought away in very small pieces."

"The only tedious part of the operation was syringing the bladder; and he was put to bed less exhausted by the operation than any patient we ever remember to have seen. There was very little blood lost during the operation. He begged to be allowed to lie upon his side: this was granted for a short time, as he expressed himself much relieved of pain by lying in that position. The operation was performed at half-past three: on coming to him about nine in the evening, we found him exceedingly well and cheerful, suffering very little pain. On looking at the wound, we were rather surprised to see no marks of blood or urine on the clothes; and we were, moreover, informed by the nurse and pupil in attendance, that no urine had passed; the patient had been lying on his back for the last three hours, having only lain a very short time on his side. Suspecting that some clot of blood might be the cause of stopping the wound, we passed the finger in, and were much astonished to find that it required considerable *boring* to introduce the finger into a wound, which six hours before admitted a large pair of forceps, inclosing a portion of stone, to pass. The fore finger was passed as far as the knuckle: a small quantity of blood and urine followed. It was not deemed necessary to do more, as he was not suffering, nor had he any desire to make water; and we reasonably enough imagined that, in consequence of the irritation of the kidney, produced by the operation, that little urine had been secreted. He was then given in charge to the nurse, with an urgent request that he should lie on his back."—*Journ. of Foreign Med. No.* IX. *p.* 50.

Towards midnight, the patient suffered great pain in the bladder, but was relieved about six in the morning, by passing a pint of bloody water by the urethra. Throughout the three succeeding days he went on remarkably well, the urine passing freely by the wound, the patient only complaining of slight pain quite on the pubes, which was attributed to the stretching of the penis on the staff during the operation, to prevent the escape of the urine. He continued very well on the fourth day, but on the fifth he was attacked with purging and a very indistinct kind of pain in the lower region of the abdomen. The purging continued—he lost his spirits—and, though suffering no particular pain, he expressed a conviction that he should die. He died on the 13th day after the operation.

"The cause of his death was fully explained on dissection. There was a large abscess, containing portions of gangrened cellular membrane, between the pubes and peritoneum; this abscess being exactly similar to that produced by effusion of urine in other circumstances." 51.

The reviewer asks what could be the cause of this? and then endeavours to explain it thus:—

"The operation, according to the received notions, was very well performed. The stone was extracted quickly, and without any laceration of the parts, or any serious bleeding: but what followed? The wound was so little bruised by the extraction of the stone, that the healthy tumefaction of the injured parts became so great, that the whole extent of the wound was actually closed. In consequence of this, it required very considerable force to pass in the fore finger: this may appear to be a thing almost incredible, but we most solemnly avow that it was so After seeing this, is it not easy to explain what took place? In the first case related, the obstruction was on the surface of the wound, and the urine was consequently driven into the cellular membrane, below the skin, into the scrotum; but here the obstruction was deeper, and the urine, while it was forcibly driven into the urethra (for it came with great violence), escaped by the cut in the side of the urethra, into the cellular membrane, between the bladder and pubes, and lodging there, was the cause of the abscess." 51.

A friend of the writer stated to him that he had been present at an operation of lithotomy. Eight hours afterwards he was sent for by the friend of the patient, and found the latter suffering excessive pain in the bladder. Finding the external wound very much contracted, he forced a catheter through it into the bladder, and thus relieved the patient by drawing off a quantity of urine. There can be little doubt, the reviewer adds, that the same consequences would have followed in this case as in the last, had not the bladder been relieved.

> " If to these cases, we add the well-known fact, that for the first twenty-four hours after the operation, the urine generally flows by the urethra, we shall probably come to form a correct judgment of the reason why patients die so often of effusion of urine, and knowing this, be led to the proper means of preventing it. The most obvious cause of this obstruction to the passage of the urine during the first twenty-hours, is the great swelling that takes place in the track of the wound, and it must be evident that the less violence there is done to the parts in extracting the stone, the more healthy tumefaction will there be." 52.

We confess that we cannot see so clearly how a clean cut, and no contusion of the parts by the dragging of a stone through them, *increase* the subsequent tumefaction. We should think it was just the reverse. Are not the swelling and tension of a gun-shot wound increased (ceteris paribus) by the efforts to drag the ball out again? And is not this a fair analogy? Speaking of the means of preventing these accidents, the reviewer asks, if it be not allowable to permit the lower extremities of the patient to lie apart, instead of being closed, as they always are, and thus, in some degree, prevent the chance of effusion, either of blood or urine? If the closing of the thighs be meant to restrain hæmorrhage, he thinks that no dangerous bleeding can be thus suppressed—and an oozing should not be checked from passing outwards. Some of the older surgeons put tents into the wound; but being on an erroneous principle, the *practice*, though good, was given up when the principle was found defective. The reviewer therefore suggests the propriety of reviving the old practice, and of leaving a canula of elastic gum in the wound for the first 24 hours.

> " But we must be still more astonished that the necessity of introducing a canula has not been more enforced, when we see how clear Sharp is in his observations. ' The first good symptoms after the operation, is the urine coming freely away, as we then know the lips of the bladder and the prostate are not much inflamed, for they often grow turgid, and shut up the orifice in such a manner,

as not only to prevent the issue of the water, but even the introduction of the finger, or female catheter, so that sometimes we are forced to pass a catheter by the penis.' "* p. 113.

"We may now be allowed to submit, that effusion of urine is generally owing to the following causes:—

"1st. That the parts at the neck of the bladder are not cut *clean*, that they are lacerated, and the cells of the cellular membrane consequently more opened.

"2d. That in trying to push in the gorget, or from the bad management in the introduction of the forceps, a cavity is made in the cellular membrane anterior to the bladder, and thus a sac is formed for the lodgment of the urine.

"3d. That the first incision is made too high; that there is not a depending opening for the urine to pass.

"4th. That, although every incision may be correctly made, still the passage of the urine may be obstructed by the swelling of the sides of the wound." 54.

But to return to Mr. Arnott. This gentleman, alluding to the dangerous consequences of extravasation of urine, after the lateral operation of lithotomy, proposes a syphon catheter to be kept in the urethra, which, he says, will carry off every drop of urine by the natural outlet, as soon as it descends from the kidney—"and instead of leaving a tendency in the

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"* We are exceedingly happy to have it in our power to give the following example of the good effects of the introduction of the canula:—

"December 8, 1820.—Henry Coleman, aged twenty-two, was cut for the stone, in the Middlesex Hospital, by Mr. Cartwright. The operation was very dexterously done, and the stone was extracted in less than three minutes after the introduction of the staff. The patient was cut at half-past twelve. At six in the evening no water had come away; a canula was then passed into the bladder. In doing this, Mr. Cartwright found the opening at the neck of the bladder very much contracted. On the canula reaching the bladder, a quantity of bloody water spurted through it, to the distance of four feet! The instrument was left in the bladder; the patient did not suffer the slightest inconvenience from it. The urine did not flow by the side of the tube, but came dribbling through it. On the succeeding day the wound appeared completely closed round the canula. On the third day the tube was removed, and *now* the opening appeared to be *larger* than on the preceding day, and the urine now dribbled freely through the wound; on the fifth and sixth day some urine passed by the penis.

"Excepting a slight pain in the bowels, combined with head-ache, on the third day after the operation (but which was completely removed by a purge, though leeches were applied as a preventive of inflammation), this patient has not suffered the slightest pain since the introduction of the canula, up to this, the ninth day. Some of the urine still passes by the wound, although a very large quantity passes by the penis. The whole progress of this case entitles us to say, that it may be considered as one of the most successful on record.

"We are happy to see that our opinions are strengthened by the authority of Dr. Physick, who has shewn so much ingenuity in many points of surgery. He says, that of late he has been in the constant habit of introducing a piece of canula into the wound, and since he began this practice his success has been much increased."

urine to spread in the wound and adjoining parts, the action of the instrument may be made so strong as even to draw any secretion from the wound that may take place in it."

" The *syphon catheter* requires to be longer than a common catheter, and instead of one opening in the point, which is on the construction of the common elastic catheter, it should have several, to diminish the chance of obstruction from the bladder touching it; and an inch of its external extremity must be turned sharply up, that it may always remain full of urine, for, should the air get into it, instead of liquid, it ceases to be a syphon, and acts only as a common catheter.* It might also be a useful precaution, to tie a bit of gut upon the outer extremity of the syphon, which would constitute a valve, allowing the escape of the urine, but by its collapse preventing the access of air. The syphon catheter must be filled with water before it is introduced, or immediately after; and it may be made to act with any desired force in removing the urine, by raising or lowering the external extremity." 103.

In speaking of the high operation, which some surgeons are endeavouring to introduce into British surgery, Mr. Arnott suggests that " a staff or strong catheter of the common form, may be made to contain, in its curved part, a sliding piece, that may be pushed out after its introduction, like the joint of a telescope; the curve would thus be lengthened to nearly a semi-circle, and of course the point might easily be felt above the pubis."—Our author conceives that, with some improvement in the instruments, the high operation is likely to become the preferable one in practice.

The case of extraction of a calculus by means of the dilator, is an amplification of that mentioned in our review of Mr. Arnott's work on stricture, in the Quarterly Series of this Journal.

We have given some account of the construction of the dilator for the use of our distant brethren; we have now only to add a few short explanations of the remaining figures in the plate given in this Number of the Journal.

" Fig. iii. is one of the Dilators used in the case detailed at p 539, in which the Stone, *fig*. iv. was extracted from the bladder, without cutting the prostate gland.

" *a*, *a*, *a*, *a*, is a cannula, by which the urine may run off.—*d*, *d*, *d*, the distensible tube of silk, lined with gut, surrounding the former.—*b*, *b*, *b*, the small cannula, through which the distensible tube is inflated from the bag *f*; *c*, being a stopcock to retain the air after injection, and *c*, *c*, a bit of flexible tube connecting the cock to the air tube, so that touching the cock by the syringe or bag may not jar the Dilator in the tender passage. A valve might be substituted for the cock with advantage. As it is important that this Dilator should be perfectly air tight, to prevent the necessity of withdrawing it for any other purpose than the substitution of a larger as the dilatation goes on, the silk tube should be lined with double gut.

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* Fig. 6, in the Plate.

Fig. v. is the Double Catheter, for injecting the bladder in cases of irritation of it or contraction, and for the solution of stone: it is exhibited on a reduced scale.—*See* the general description of it, p. 541.

"*f*, is the reservoir of the liquid to be injected; *d*, the flexible tube, commencing at the stop-cock *e*, by which the liquid is conveyed to the inner catheter *a*, which then carries it into the bladder, opening at *a*; *b*, *b*, *b*, is the outer catheter, by which the fluid returns with the urine, and is directed to a proper recepticle by the flexible tube *c*, of any desired length. It is important to have the outer catheter of considerable diameter, to diminish the chance of its being obstructed by the tenacious mucus, so commonly secreted in disease of the bladder.

"Fig. vi. the Syphon Catheter, for drawing off the urine constantly and completely after the operations of Lythotomy and puncturing, or any wound of the bladder, so as to prevent the urine escaping by the wound.—*See* the description, p. 547.

"Fig. vii. is to give the idea of something made to protrude from the end of a catheter or tube, after its introduction into the bladder, which will act as a button to prevent the tube slipping out, *see* p. 547. A variety of contrivances are applicable to this purpose." iv.

We entertain strong hopes that the ingenuity displayed by Mr. Arnott in the construction and employment of the dilator, together with his general information, and professional ability, will prove equally serviceable to his brethren, and creditable to himself.

Principes généraux de Physiologie-Pathologique, coordonnés d'après la Doctrine de M. Broussais. Par L. J. Begin. 8vo pp. 390. Mequignon-Marvis, à Paris, 1821.

(From the London Medical and Physical Journal for April, 1821.)

In the preceding article on the subject of this work, we took into consideration some of the principles most obviously connected with the developement of morbid actions in the human body: we shall now pass in review, in a similar manner, several of the most important phenomena of disease, and endeavour to indicate how far they may be illustrated by means of the principles above alluded to, without entering more deeply into the history of their origin than is conformable with the researches of our author, and the ordinary habits of reflection of medical practitioners.

Mr. Bégin commences his disquisition on maladies in general, with the proposition that all diseases have their origin from more or less severe "lesion" of one or other of the "organs" of the body: by which statement, he means to indicate that there are no original diseases of the system generally, and that many of the symptoms in those appearing to be so extensively seated, are only effects or accidental contingencies of the essential organic lesion. This proposition will by many men be considered so obvious an inference from the best physiological, as well as etiological, views, as not to require an author now to produce any arguments in its support; and M. Bégin would probably have done no more than simply state it, had there not been recent instances of attempts to render prevalent some vague, or more properly, absurd, notions of certain diseases (idopathic fever, as they say,) having their original seat in no one part especially, but in the whole system generally; a proposition which precludes all reasoning on the nature of the diseases said to be of this species; for it is impossible to draw any inferences respecting their etiology, when we have no ideas on which any reasonings can be founded.

All the local lesions which produce the apparent external phenomena, by the aid of which we recognize those diseases, do not leave traces, after death, in the part they have affected. Morgani, Mr. Bégin remarks, and several other physicians whose accuracy of observation and due qualifications cannot be doubted, have stated that they have seen instances of patients dying after having experienced the symptoms of apoplexy or of pleurisy, without the body, after death, presenting the slightest sign of lesion of the brain or of the pleura. But these cases do not lead to the inference that diseases may exist without derangement in the vitality and texture of the organs: they only show that these derangements are sometimes so inconsiderable as to be dissipated, or not to be apparent, after death. The redness of the cheeks and tongue, which is sometimes produced by gastro-enteritis; peripneumonia, erysipelas, and other cutaneous inflammations, though very severe during life, often disappear instantly after death and why may we not concludethat the same results may take place in inflammation of the internal organs?

After the establishment of the proposition above stated, a question Mr. Bégin says, the solution of which is fundamental in pathological physiology, is this: "In how many different ways may the living tissues be morbidly altered?" Notwithstanding the objections which have been raised against it, and the partial modifications which it has suffered, the fundamental proposition on which *Brownism* rests, Mr. Bégin says, has been religiously preserved: and Professor Broussais himself, who is considered as the most strenuous adversary of that doctrine, in some degree conforms to it. "The *pathologic lesions** of the diverse tissues, says the author of the new medical doctrine, are characterized by the diminution or the augmentation in their vital phenomena. For us, the first of these states is an *ab-irritation*, the second a *super-irritation*, or *morbid-irritation*." On this point Mr. Bégin very properly remarks, that a consideration which presents itself before the question can be discussed, is, that the tissues which BICHAT regarded as simple are very complicated, and should be analyzed by the pathologist. There enters, for example, in the composition of the mucous membranes, capillary blood-vessels, arterious and venous; cerebral nerves, and nerves of the ganglionic system; mucous follicles; exhalent and absorbent vessels; and it is obvious that especial lesion of each of those elementary textures will produce particular and peculiar effects in the organ in which it is seated, as well as in the remote parts with which it is related. With respect, too, to the therapeutical indications founded on the same principles, there are certain agents which seem to modify with more predilection one of those elementary textures than another. Thus, some purgatives often confine their agency to the production of a more abundant secretion of mucous fluid; certain stimulants excite more expressly than others the nervous sensibility, whilst many substances of the same kind act with more energy on the capillary blood-vessels. These distinctions may seem to be minute, but they are well-founded, and present some important therapeutical indications. They elucidate phenomena which are constantly witnessed in practice, and, amongst others, the effects, in a manner elective, of a given stimulant which cures, whilst another stimulant, not apparently more energetic, would have certainly been deleterious. Thus, for example, there is a certain degree of gastric inflammation which is removed by a dose of tartar-emetic, and which would have been aggravated by wine or ether: the tartar-emetic, wine, and ether, are all stimulants; and the first, if applied to the skin in a healthy state, would excite more inflammation in it than either of the latter. A multitude of examples of a similar kind will readily present themselves to the reflective observer.

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* We cite here the terms of Mr. Bégin.

Besides these considerations, Mr. Bègin adds, that we reasonably doubt if these notions of augmentation and diminution of action being the only modes of essential disease "the simplicity of which is so seductive, and which the physician uses with so much assurance at the bed-side of the patient, are comformable with the course of nature;" and it is, he continues, "not without alarm that we can see all diseases reduced to two classes; the materia medica to two kinds of medicines; and general therapeutics to two curative indications."

"We cannot conceive, we must confess, what can be the nature of the vital actions which should not consist in depression or exaltation of the powers; but this motive is not sufficient for their rejection, if acurate observations attest their existence: this relation of more or less is not the only one which may exist, either between bodies, or their qualities, or the actions they execute. Does it not appear, for example, that syphilitic irritation, which has the same seat as scrofula, differs from the latter only in degree? The different species of herpes, although seated in the same order of vessels, present peculiar diversities which are not explicable by diversities in the violence of the irritation. Let us however observe, that, in proportion as physiological pathology is improved,—as we study with more attention the diseased tissues, and take into consideration the modifications which diversities of age, sex, and temperament, effect in the morbid phenomena, we see diminish the number of diseases to be attributed to different species of augmentation or diminution of the vitality of the organs. The time will perhaps arrive at which the two principles of the Scotch physician will be demonstrated to be exact in all cases: but hitherto the evidence does not appear to be complete: new researches are necessary, in order to elucidate this point of doctrine."

We have cited thus copiously from the work before us, in order that we might enable the reader to form an idea of the scope of Mr. Bégin's reflections in this instance: the examination of the subject has been pursued to its utmost depth by only one author, whom we should incessantly quote, were we to do justice to his merits.

However it may be with regard to the subject of the foregoing discussion, Mr. Bégin says "it is indubitable that a very great majority of diseases consists in exaltation or diminution of vital action, and that one or other of these alterations always effects certain organs, which then produce in the economy very various sympathetic effects, which characterize, externally, the different diseases." The views here indicated are, perhaps, as penetrative as any that can be taken with our present knowledge of the human economy; and, what is more worthy of consideration, they are probably sufficiently so for the purposes of general use, where more profound information and nicer distinctions might not be often available.

"Are the diseases which consist in *irritation** more frequent than those of which debility is the first cause?" is a question next noticed by Mr. Bégin: it is one, he says that merits all the attention of physicians, for it must lead to very different practical results, according to the manner in which it is solved. Broussais, though he has designated many of the diseases which he considers to consist in *irritation*, has not yet expressed his opinions on this point in a comprehensive manner: Mr. Bégin endeavours to supply the deficiency here alluded to.

"It would seem, on a first consideration," Mr. Bégin says, "that vital action is as susceptible of diminution as of exaltation. It would be possible even to sustain this proposition in a general manner; and many physicians would not only have faith in it, but would demonstrate that the former of these deviations is of more easy and frequent occurrence than the latter. However, when we study facts, when we observe a great number of patients, and we arrive thus to the source of our knowledge, we soon acquire the most complete conviction that irritations constitute alone almost the entire demesne of pathology. Look over the nosologic tables; study the phenomena of diseases; open dead bodies: every where, in books, at the bed-side of patients, and in the amphitheatres, you will find proofs of the correctness of this assertion." These three (or properly two) sources do not present such demonstrative proof of Mr. Begin's assertion as he conceives; or they only show that certain phenomena, which we confound altogether under the name of irritations, most generally accompany the progress of diseases. The appearances found on the examination of dead bodies, are often only very remote effects of the first morbid change in the constitution of the parts affected, to which we must advert if we are to have correct notions of the nature of the disease; and with respect to the symptoms, during life, of *irritations*, it yet remains to be proved that they are indications of an exaltation of vital action. But let us admit, as a matter of convenience, that irritation is an exaltation of vital action, or is essentially allied with such an exaltation, and that the developement of irritation is the first or most important morbid change in the diseases which are accompanied with, or ordinarily characterized by it;—let us admit thus much, and see how Mr. Bégin supports his proposition, that such diseases constitute alone almost the entire demesne of pathology. "What has led systematic physicians to eroneous conclusions," Mr. Begin says, "is their appreciating the force of the irritated organs by that which is possessed by the external parts; or, rather, they most commonly are ignorant of what organs are affected, and seeing the limbs enfeebled, they infer that the disease is owing to debility, which has struck, as they say, the whole organization."—"These heresies," he adds, are no longer admitted by enlightened practitioners: and their discredit is such that criticism should disdain to combat them." This emphatic, rather than forcible reasoning, leads him to assert, in continuation, that "observations, well directed, demonstrates *then* that the most part of affections consist in irritation of the organs: and my task would be confined to the announcement of this general result of the best-directed clinical investigations, and to cite MORGAGNI, BICHAT, PROST, DUPUYTREN, LAENNEC, and BROUSSAIS, who have rendered it incontestible, if it were not indispensible to theory to trace the series of physiological phenomena that explain the fact above stated." This is effected by Mr. Begin in the following manner; omitting here only some details not of essential importance to the disquisition.

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* The word *irritation*, employed in a general manner, according to Mr. Begin, "signifies an augmentation of action of the capillary vessels or of the nerves which enter into the composition of parts. But, whenever it is necsssary to give more precision to language, and to designate the texture especially affected, it becomes convenient to employ the following expressions: *sanguine irritation*, *lymphatic irritation*, *nervous irritation*, &c."

The nutritive actions of composition and decomposition preside over the existence of animals and vegetables. In order that a body having life may execute all the actions necessary for this function, it is requisite that it be excited; and if it ceases to be thus affected, it languishes and perishes. Two classes of agents, indispensible for the maintainance of life, and which may become powerful causes of disease, are the excitants of the organic movements; one of which consists of matters that stimulate the economy, without presenting to it any thing which is capable of increasing the quantity of its liquid or solid materials;* the other of substances which provoke the exercise of its functions, at the same time that they furnish it with the matters which repair the losses it suffers. A subdivision of the agents which excite the animal economy, is that into such as stimulate the whole system, and such as exert their influence only on certain parts of it. The general stimulants are light, caloric, electricity, oxygen, aliments of good quality, a due abundance of blood properly endowed with nutritive materials. The energetic, long-continued, and united action of those different excitants, augments the force and vivacity of the vital actions, and thus disposes all the organs to excessive excitement; and the state of the economy which results from this violent stimulation (which is most commonly experienced in the age of adolescence, and most remarkably in the nations which inhabit the hotter regions of the globe,) is sometimes carried to such a degree that the subject of it, tormented by a superabundance of force, instinctively gives himself up to the most fatiguing exercises, and to the most destructive excesses, in order to dissipate this exuberance of vitality, which torments him beyond endurance.

The superabundance of very stimulating nutritive materials may arrive at such a state as will determine, in the most sensible parts, and especially in the mucous membranes and in the blood-vessels, an irritation which is followed by disturbance of the circulation and the other functions, and which constitutes that variety of inflammatory fever that Sauvages called plethoric.

Different effects are produced when the non-nutritive stimulents are the only species which act with an excess of power. The organs then are incessantly stimulated, without the losses produced by the vital movements being properly repaired; the nervous susceptibility then becomes extremely developed; the body becomes emaciated and enfeebled to the utmost degree. Such of the people of Asia and Africa as indulge in a continual abuse of opium, coffee, and in undue developement of certain passions, as venus nimia, &c. and who feed on aliments having but little nutritive qualities, present examples of the effects of the inordinate use of non-reparatory excitants on the animal economy.

The privation of the two classes of general stimulants above mentioned, leads to a diminution of the vital powers in all the textures. The nutritive elaborations languish and become less complete; the organs, imperfectly nourished, are incapable of fulfilling their functions in the ordinary manner; the colourless fluids predominate over the red blood, and the latter itself is of a less intense colour, and contains less of nutritive matter than in the more healthy state. The results of the want of these general stimulants may be observed in cold, humid, and marshy countries, where the inhabitants are nourished with a meagre and insalubrious diet. Persons in this condition are equally deprived of moral and physical energy,* and their vital actions preserve in their diseases a remarkable degree of sluggishness and debility, whilst the sympathetic movements in them are deprived of energy and vivacity. All the parts of the body are not, however, equally debilitated in these subjects. "The weakness resides almost exclusively in the exterior parts and in the least important organs: in proportion as the forces diminish, life becomes concentrated, in a manner, and retires towards the parts the most indispensible to the preservation of the individual: the principal focuses of the vital power absorb the last remains of the nutritive materials, and are the seat of the latest movements."

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* This reasoning is shown to be incorrect in a work lately reviewed in this Journal. See vol. xliv. p. p. 40.—42.

The superabundance or the penury of the general stimulants determine, in the whole economy, a relative excess of force or of more or less considerable debility. The too energetic action of those agents excites especially the nervous system; their privation debilitates the same parts, favours the elaboration of colourless fluids, and alters the composition of the blood. In the first case, there is an imminent disposition to irritation; but all the organs possessing the degree of energy which is appropriate for them, and being habituated to a regularity and facility of action, there is established in the economy an "equilibrium," which the most immoderate abuse of excitants can hardly destroy. In the second case, the disposition to irritation is far from being abolished; it is perhaps more considerable† than in the other condition; the nervous mobility‖ favours "local concentrations," which takes place with particular facility in the abdominal viscera: the "equilibrium" being but ill established, or even broken in favour of those viscera, their lesion is the effect of the action of the most slightly energetic causes; though, if a person escape the influence of such causes, he may live in a languid state, and be even ready to perish, by the gradual extinction of his strength, without presenting any sign of local irritation, or any other "lesion" existing than his debility.

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* We may refer the reader to the writings of Montesquieu, Kaims, Cabanis, and De Stael, for extensive disquisitions on this subject, and a due appreciation of the general statement of Mr. Bégin.

† This doctrine, of parts in a state of relative debility being *therefore* especially disposed to irritation, at the same time that irritation is regarded as an exaltation of vital action, is sadly in want of something like plausible arguments for its support: it is, however, a piece of doctrine that is now very popular.

‖ It should be remembered that Mr. Bégin has just said that the nervous system is especially enfeebled in this condition.

The most general, most active, and most efficacious cause of excitation of the organs, is the exercise of the functions of those organs; an exercise which is provoked by the application of the stimulants which are proper to them: and on the contrary, a want of exercise of them is the circumstance which most contributes to enfeeble them. Exercise determines in the vessels of the organs a more considerable afflux of fluids; their tissues, when excited by this cause, become more solid, more voluminous, and acquire an increased ability for action; but such effects take place only when the elements of nutrition are carried to the organs in a due abundance, and when they are of a good quality; without this last condition, the parts would only become enfeebled by their exertion.

It is to the alternative action of our organs that are to be attributed, almost exclusively, this "equilibrium" of the vital movements, and those regular and periodic returns of repose and excitement that are observed during life. Those alternatives of action, their periodic returns, and the simultaneous excitement of two or more organs, rapidly become habitual when they have once been established, and constitute associations of functions and synergies, which play an important part in the developement of the phenomena of diseases. Disease of one organ thus rapidly excites disease of other and remote organs, by an influence that is impalpable to the senses, but which we know, from its effects to exist.

The inaction of one of our organs, by depriving it of the concentration of vitality which is the immediate effect of irritation, and by keeping absent from it the materials of nutrition, which are elsewhere directed, debilitates this organ, and insulates it, in a manner, from the rest of the economy: "but without any sympathetic effect in the other organs resulting from this inaction."* In order to recognize the correctness of this proposition, it is, however, necessary to distinguish, in diseases of debility, that which appertains to the local debility that which appertains to the local debility, from that which is produced by *the interruption of the functions of the enfeebled organ.* "All the sympathetic lesions are produced by the nervous system,"* and "it is not possible for them to be affected otherwise than by means of the influence of an organ which is itself primarily *irritated.*"† Thus, for example, the stomach may be in a state of debility, without any sympathetic effect in the system resulting from it.‖ But, in this case, the organ will effect an imperfect elaboration of the aliments it receives, and this imperfection will give rise to more or less secondary phenomena. "An organ simply enfeebled, is not painful; it cannot, consequently, transmit any excitation to other parts. The physiologist should regard it merely as a parasitic instrument, which lives at the expence of the economy; the mass of which is useless, but which exerts on the rest of the body no other deleterious influence than that which results from the cessation of its functions."

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* This last proposition is very disputable, even with the modificatiens of it which immediately ensue. It is amply discussed in the Dissertation which gained the Jacksonian prize in 1813, and in several parts of the "General Indications which relate to the Laws of the Organic Life."

Such are the principles on which Mr. Bégin founds his conclusion that by far the greater part of diseases are constituted of *irritation:*‡ but there are, he says, other reasons from which it happens that, whatever may be the nature of diseases on their first developement, physicians hardly ever have to treat any others than those of irritation. "Men are," Mr. Bégin says, "as it is well known, much more disposed to the abuse of stimulants than to endure their privation. *It is extremely rare that this privation is sufficiently complete to give rise to* [literally, to *determine*,] *diseases;** and when persons, even those the most exempt from prejudices, become sick, they at once resort to the use of the most active tonics or excitants. The labourer, oppressed by want, collects the last remains of his property, to procure himself wine, brandy, or other analogous liquors. Hot wine with sugar, punch, *vulneraries*, preparations of steel, elixirs of all sorts, sudorific infusions, compose the pharmacopœia of the more opulent persons. It is extremely rare, in the practice of medicine, either in hospitals or in the largest cities, to meet with diseases *free from all curative attempts:*† almost always have the subjects endeavoured to remedy them by the aid of stimulants. There results from this general practice, that, if the disorder has depended on a penury of excitants, it is rapidly dissipated, and the physician is not consulted. Professional aid is sought only when the affection has resisted the common *touchstone*, and when the patient has already aggravated the disorder by the incendiary agency of the most powerful tonics; and, solely because his advice is required, the practitioner should expect to have to treat a disease which consists in irritation of some one of the organs; examination but rarely controverts this presumption."

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* This is a disputable proposition. If one branch of a polypus be rudely touched, another branch of it will, as an effect of this impression, be put into vital action: this effect cannot well be distinguished from those we term sympathies; and no nerves have been found in the polypus. A similar effect may also be witnessed in the sensitive plant. Some men, it is true—reasoning on the *petitio principii,* that no mode of sensibility can exist without nerves,—have inferred that even plants must possess nerves: but, if we are to contemn the evidence of our senses after this manner, we must resign all our pretentions to knowledge on any subject.

† This is a very interesting question in physiology: whether there be a communication of properties from one part of the economy—otherwise than from the blood and the nervous system, (which Mr. Bégin, from some inadvertency, we conjecture, neglects to notice, unless it may be considered that he has contemplated this in the effects of *the functions of organs:*)—to others, in the state of health, that is necessary to the preservation of this state; and, therefore, whether diseases may not arise in various parts, from an enfeebled organ not transmitting its ordinary influence, *as well as from a communication of* IRRITATION? We know, however, no positive arguments in favour of the affirmative; whilst the negative is supported by such as these,—that the rest of the economy will preserve its ordinary health after the loss of two or three limbs. Mr. Bégin's proposition must, therefore, be considered as highly probable.

‖ Mr. Bégin says, that the sense of weakness about the epigastriun, and the general languor which arises from it, (and which are removed by the smallest quantity of food or a single glass of wine,) from hunger, should not be considered as objectionable to his proposition: "it is incontestible," he says, "that there is then *pain* and irritation in the stomach, and that the general symptoms are produced by this pain, which is alleviated by food or drink:" but, if substances of too stimulant a kind, or such as are not proper for nutrition, are taken, this irritation is aggravated, and the general debility increased.

‡ This term is here used according to Mr. Bégin's application of it: that is, as designative of an exaltation of vital action. When we ourselves use this word, it should be understood that we employ it as a concise expression of our ignorance, when we suppose that some modification of vital action, of a morbid kind, exists, with the nature of which we do not pretend to be acquainted. We use the term excitement, to designate what we conceive to be a simple augmentation of vital action. We are

Mr. Bégin then sums up his inferences respecting the nature of diseases in general, in the following manner:

"1°. The excessive action or the privation of general stimulants, never provokes, in the economy, any thing more than states of force and of debility, respectively, which predispose to local diseases. 2°. Even in the case of a penury of stimulants, the weakness is greater in the exterior than in the cen-

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not, however, satisfied that it is possible for such a mode of action to exist; yet it may be convenient to have a term for expressing an augmentation of action which is not accompanied with, or necessarily followed by, any sensible morbid effects.

*Mr. Bégin should read Dr. Harty's History of the late Epidemy of Ireland.

†Mr. Bégin will excuse our altering his mode of expression in our translation. "Maladies *vierges* de toute tentative de traitement," is too metaphoric, too delicate for English sensibility, to permit us to adopt the expression, however highly we may ourselves admire and approve such an ornament of style in medical literature.

tral parts; and this circumstance favours the developement of irritation of the latter. 3°. Local *ab-irritations* cannot excite any sympathetic phenomenon of re-action in remote parts. 4°. The absolute privation of food, and the use of substances not proper for nutrition, which are considered as the general causes of debility, provoke irritation of the digestive organs, which complicate and augment the state of debility of the other parts of the body. 5°. Although diseases originating from debility were more frequent than we can suppose them to be from the foregoing reasons, the physician would yet have but a very small number of them to treat, because patients almost always, before they resort to professional aid, adopt the use of stimulants, which cure them in cases of debility, but which, most commonly, aggravate irritation."

Mr. Bégin says that he should here have terminated what he had to say about diseases in general, if, after Brown, the existence of passive inflammations and hemorrhages had not been a point of doctrine "generally professed." The objectionable notion here indicated is by no means generally adopted amongst us, and those who profess it, after having considered what has been said on the subject by Dr. PARRY and some others of our writers, would not, we conceive, have their faith destroyed by the arguments of Mr. Bégin. Professor Broussais' opinions on this subject, and his etiology of scurvy,—a disease which has been considered to present proof of the existence of passive hemorrhages,—have already been stated in this Journal. We shall, however, transcribe the paragraph which forms a conclusion to Mr. Bégin's discussion on these subjects: it presents in itself a summary of his opinions.

"Thus, on carrying our analysis to the utmost point, it is irritation that is the sole cause of the 'oscillation' and the 'equilibrium' of the vital actions; it is that which 'calls' the fluids, and which determines their afflux to this or that particular part; it is irritation which excites, or which exasperates, the motions of the capillary vessels, whether sanguineous, secretory, exhalant, or others, whatever may be the elaborations with which they are charged, and the composition of the fluids they prepare or contain. *Ubi stimulus, ibi affluxus*, and *Duobus laboribus simul obortis, vehementior obscurat alterum:* such are the bases of physiology and pathology. These axioms are, in medicine, of an importance equal to that of this proposition, that all bodies reciprocally attract each other, and that their attractive force is in a direct ratio of ther masses, and in an inverse ratio of the square of their distances: a proposition which serves as the basis of all explanations in physics."*

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(Continued from No. III. p. 412.)

(From the London Medico-Chirurgical Review, for March 1821.)

In our last number we gave a full analytical view of the first eight articles in this important volume. Eight more remain to be reviewed, occupying 230 pages of letter-press, and containing a great mass of highly valuable matter. Our analysis, therefore, on the present, and all other similar occasions, must expand in proportion to its freight—and not, like the bed of Procrustes, stretch or restringe it to its own arbitrary dimensions.

Some Observations on the nature and treatment of the Calculous Diathesis. By Wilson Philip, M. D. F. R. S. E. &c. *Communicated by Dr. Baillie.*

Calculous complaints have, of late years, much occupied the attention of physicians, surgeons, physiologists and chemists. Exclusive *chemical* doctrines and treatment, will not, in all probability, be ever found to apply to any disease. The chemical and mechanical agents, in the human body, are so greatly modified and controlled by the vital powers, as to render all chemical and mechanical explanations unsatisfactory, and the therapeutics growing out of them hazardous. The aid of chemistry, however, is not to be overlooked—and in the class of diseases now under consideration, that interesting branch of science has contributed much to the success of the physician. We agree with Dr. Philip, that Magendie's hypothesis respecting the calculous diathesis is far too chemical. Because azote enters into the composition of lithic acid—because those who swallow much animal food and fermented liquors are liable to calculous disorders—and because animals confined to food containing *no azote*, (and thus having their health and secretions deranged) produced *no lithic acid*, M. Majendie infers that the secretion of this acid depends on the azote received in alimentary substances. Nothing can be more fallacious than such forced experiments; since numerous circumstances must influence the state of the urine, besides the quantity of azote in the ingesta, as Dr. Philip justly observes.

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* It would be very amusing, were not the subjects of medicine of too serious a nature to allow of such a feeling being indulged when the best interests of that science are violated, to contemplate the diversities of opinion amongst men of eminent talents respecting even the very principles of pathology. Broussais and Mr. Begin regard irritation as the foundation of almost, if not quite, all diseases; and irritation they consider to be an affection, originally, of the nervous system.§ These are notions which have been designated by a modern English author, who was really a medical philosopher, as "either visionary or inapplicable, and which lead to practices tending equally to debase the moral character of mankind, to produce or perpetuate disease, and to discredit the medical profession."

§ Mr. Begin says, in conformity with Broussais, that "the agents of irritations commence, in all cases, with agitating the nervous system, which seems to be especially destined to collect all impressions; it is only secondarily that the stimulation is communicated to the capillary vessels, and that the fluids are directed towards the parts."

As calculous concretions almost always consist of uric acid, in the commencement of the disease, it is Dr. Philip's object, in the present enquiry, to ascertain, as far as possible, "the circumstances which lead to produce a deposition of this acid in the urinary passages." For this purpose he instituted a series of experiments, twenty-three of which are substantially, though not minutely detailed, and some of which we shall here rapidly glance at.

In the *first* experiment, a young man, in good health, and living on vegeto-animal food, deposited daily from his urine about a grain and a half of lithic acid. But when the addition of three lemons daily was made to the same diet, and under exactly the same circumstances; the amount of uric acid deposition was three grains and a half. The second and third experiments have much the same tendency.

In the fourth experiment, a young man lived wholly on animal food and bread with water, for two days. At the end of this time depositions of the phosphats, but not of lithic acid, were found in different portions of urine set apart on the second day.

After two days usual mode of living, he ate a lemon on the evening of the latter. On the following day he lived entirely on vegetable substances, except a little broth at dinner, eating this day two lemons. The next day same diet, with three lemons. The urine now deposited lithic acid.

These, and some other experiments of a similar kind, prove, Dr. Philip thinks, that considerable and even slight changes in diet influence the state of the urine. It appears also, from our author's experiments, "that acid and acescent ingesta promote the deposition of lithic acid from the urine, while an opposite diet prevents it, and tends to produce that of the phosphats." But this rule does not hold good always, as the 8th and 9th experiments of Dr. P. shew. In the *first* and *fourth* days of the 8th experiment, the quantity of lithic acid was the same, although in the former (1st day) the diet had been wholly of a very acescent nature, consisting of bread, milk, honey, sour cream, and sugar; while in the *latter* (4th day) it was composed of a large proportion of animal food. The 10th experiment shews that the diet may be of the most acescent kind, and even a large quantity of acid taken, without occasioning any deposition of lithic acid. It is also remarkable in this case, that contrary to Majendie's theory, the increased perspiration, as well as several other causes, lessening the urine; tended to increase the deposition of lithic acid. Still, however, it is true, that *cæteris paribus*, the less liable is lithic acid to be deposited, the greater the quantity of water in which it is dissolved. Several experiments are related in which the sensible and insensible perspiration was augmented by medicines, in all which cases the urine deposited the phosphats, but little or none of the lithic acid.

"The following difference in the effects of tartrite of antimony and compound powder of ipecacuanha deserves to be noticed. The effect of the latter on the urine is transitory, apparently ceasing as soon as the sweat ceases to flow. That of the former may generally in a greater or less degree, he perceived for several days after it is taken, during which it still seems to lessen the tendency of the urine to deposit lithic acid. I have also repeatedly observed, that the deposition of lithic acid was not so effectually prevented by tartrite of antimony, when it produced nausea, as when no sensible effect was experienced from it, a fact which we shall find explicable on principles we shall presently have occasion to consider." 202.

Dr. Philip observes that we are acquainted with few medicines which more powerfully promote the secretions than mercury; and he has had several opportunities of observing its effects on the urine. The 10th experiment is illustrative of some of these effects. The urine of a young man (a pint in quantity) was ascertained to deposit four grains of lithic acid in the twenty-four hours, without any of the phosphats. He now began to rub in a drachm of strong mercurial ointment daily. In a few days the quantity of urine was reduced to one half pint, and deposited no lithic acid, but a copious sediment of the phosphats. In a fortnight the mercury began to disorder the stomach, and general system—now his urine became more copious, and again deposited lithic acid, without phosphats. Dr. P. considers that the diaphoretic action of the mercury, in the first instance, diminished the urine, and prevented the deposition of lithic acid; but that when the stomach became disordered, the skin, from its well known sympathy with that organ, became less active, hence the increased flow of urine, and the changes in its depositions. These effects our author has observed more than once.

Experiments XXI-II are brought forward to shew the effects of *indolence*, in increasing the deposition of lithic acid from the urine.

So far back as the year 1786, Mr. Forbes, in a pamphlet on Gravel and Gout, stated that the addition of any acid, even the carbonic, to urine, occasions a deposition of lithic acid. Dr. Philip repeated this experiment, with sulphuric, nitrous, muriatic, citric, and carbonic acids, and always found the result as stated by Mr. Forbes. Dr. P. also found that the addition of an acid prevented the deposition of sediments since discovered to be certain phosphats of the urine. The resumée of our author's experiments may be stated thus:—

> "1. That acid and acescent ingesta tend to increase the deposition of lithic acid from the urine, and to prevent that of the phosphats.
>
> "2. That a diet, composed of a large proportion of animal food, tends to lessen the deposition of lithic acid, and to increase that of the phosphats.
>
> "3. That every thing, which promotes the action of the skin, tends to prevent the deposition of lithic acid, and to occasion that of the phosphats.
>
> "4. That dyspepsia tends to increase the deposition of lithic acid, and to lessen that of the phosphats, both by producing acidity of the primæ viæ, and by rendering the skin inactive.
>
> "5. That indolence has the same tendency, both by inducing dyspepsia, and by lessening the activity of the skin in proportion as it impairs the vigour of the circulation.
>
> "6. That an acid passes by insensible as well as sensible perspiration."

It appears, Dr. Philip observes, from the foregoing experiments, that, however much an acid may prevail in the *primæ viæ*, if the perspiration be free, the deposition of lithic acid is prevented; and a tendency to that of the phosphats produced. "From these facts the inference appears to be unavoidable, that more or less of the acid which, when perspiration is languid, passes by the kidneys, occasioning a deposition of lithic acid, and preventing that of the phosphats, is, when the action of the skin is vigorous, thrown off by this organ." Our author has often observed that it is more effectually thrown off by augmenting the insensible than sensible perspiration—in the former case, he thinks, and with reason, the skin is more active, in the latter more relaxed. Similar observations apply to the kidneys. Dr. P. has reason to believe, that more acid is passed both by the kidneys and skin in the day than in the night. "Even the debilitating effects of nausea seem to lessen the power of the skin to throw off this acid." We may thus, he continues, see how causes, debilitating the digestive organs, may at length give such a disposition to the precipitation of lithic acid from the urine, that this shall take place before it leaves the pelvis of the kidney. The result of Dr. Philip's experiments leave no reason to believe that more lithic acid passes by the kidneys, when we use an *acescent* than a contrary diet. It only appears that in the former case, more than usual of some other acid, capable of precipitating the lithic acid, passes by the urinary apparatus. "Nor have we any reason to believe, when we see the precipitation of lithic acid prevented by diaphoretics, that this acid is thrown off by the skin. We still find it precipitated from the urine on the addition of any *other* acid. But here the diaphoretic has excited the skin to throw off the acid which would otherwise have passed by the kidneys and occasioned its precipitation.' If these views be correct, M. Majendie has greatly erred "in directing his attention chiefly to the constituent parts of the lithic acid, and proposing to prevent its formation by preventing the reception into the system of *one* of those parts." It is not the existence of lithic acid in the urine, but its precipitation, that we are called upon to guard against.

The success of the preventative treatment, founded on these principles, is a strong confirmation of their correctness. Dr. Philip has long employed this plan, and in almost every instance where no concretion had actually taken place, the recurrence of gravel was prevented while the patient conformed to it.

> "It consists in such an attention to diet, exercise, and free action of the bowels as tend to remove and prevent dyspepsia, and to support a due action of the skin, with the use of antacids, of which I have found soap the most effectual." P. 220.

Notwithstanding the disadvantages adverted to by Dr. Marcet respecting the over-use of magnesia, Dr. Philip thinks that, as a preventative of gravel, magnesia, both by correcting acidity in the primæ viæ, and forming a mild cathartic salt there, is a very useful article. Magnesian concretions in the intestines may be obviated by mixing with it a small proportion of finely powdered rhubarb, the taste of which may be concealed by some aromatic.

"It is, I conceive, by removing acid from the primæ viæ, relieving the digestive organs from a load, and rousing them to better action, that cathartics are often of great use in obviating the tendency to gravel." 223.

Many of M. Majendie's own observations, indeed, shew that dyspepsia is the cause of gravel, and that the means which remove this are the best lithontriptics—at least the best means of avoiding stone. Dr. P. having made many ingenious remarks on Magendie's doctrines, concludes thus:—

"Upon the whole, reviewing all that has been laid before the reader, I cannot help thinking that we have reason to believe, that gravel generally originates in a precipitation of lithic acid in the kidneys, in consequence of a greater than usual quantity of another acid, generated chiefly in the primæ viæ, passing by these organs; and that the best plan of prevention is to correct the tendency in the primæ viæ to form this acid; to support, by means which invigorate the powers of circulation, the action of the skin, by which in health any superabundance of acid is thrown off, and, when we find that notwithstanding such measures, too much acid still passes by the kidneys, to correct it by antacids before it enters the circulating fluids." 229.

This paper of Dr. Philip's is distinguished by ingenious reasoning and sound principles of practice.

A Contribution towards solving the disputed Question "what is the Nature of the Process called the Spontaneous Evolution of the Fœtus? By Robert Gooch, M. D. Physician to the Westminster and to the London Lying-in Hospitals, &c.

As an ouncs of judgment is worth a pound of learning, so a single fact is worth a dozen of arguments. Without noticing the various disputes respecting the *quomodo* in this very curious Evolution of Nature, we shall proceed to state the case which gave origin to the paper under review.

On Sunday morning, the 24th October, 1819, Dr. Gooch was summoned to a woman, attended by one of the midwives belonging to the Westminster Hospital, and who was in labour with her first child. The midwife reported, that when the membranes had broken, that morning at 4 o'clock, the orific of the uterus was found somewhat open, but no part of the child could be felt. At length the pains became stronger, and the arm descended, when Dr. Gooch was summoned. When Dr. G. arrived, the arm had not only protruded its whole length, but the shoulder had turned forward under the arch of the pubis, like the occiput just before the head is born. Dr. G. also perceived, that at each pain, the side of the child's thorax was pressed down with great force against the perinæum. The arm, instead of receding, was portruded still farther, and advanced so rapidly, that in two pains, with a good deal of muscular exertion on the part of the mother, the side of the chest, of the abdomen, and of the breech, passed, one after the other, in an enormous sweep over the perinæum, till the nates and legs were completely expelled. The head and other arm were now extricated with great ease. The child had been dead for a day or two before. It was of the full size, and the pelvis of the mother was not particularly capacious. The child being dead, our author thinks, is more favourable to spontaneous evolution, than when it is living. Some positions, too, he thinks, facilitate this process.

"The *most favourable* would be that in which the shoulder is to the arch of the pubis, the head towards the front, and the nates towards the back of the uterus. The *least favourable* would be that in which the shoulder is to the sacrum, the head towards the back, and the nates towards the front of the pelvis."

We have seen only one instance of spontaneous evolution of the fœtus, in the practice of a country surgeon, and where two practitioners had tried, without success, to turn. The arm and shoulder had protruded. We were not present at the moment of expulsion, and therefore, cannot say whether the arm receded before the evolution or the breech; but the mother died in 12 hours after this dreadful effort.

"If the arm and shoulder," says our author, "protrude far; the pains are strong, and the thorax presses hard on the perinæum, it will be right to wait and watch for a little time; beyond this, whoever suffers a knowledge of this rare fact to discourage him from turning in arm presentations, would be guilty, I think, of criminal irresolution." 247.

This paper is very creditable to its able author.

On the Employment of Venesection in Cases of sudden seizures, commonly called Fits. By JOHN LATHAM, M. D. F.R.S. President of the Royal College of Physicians, &c.

IN several of our late Numbers, we have stated our fears, that ultra phlebotomy would bring a useful and efficacious measure into disrepute. We have, also, repeatedly exhorted our brethren to practise *local* detractions of blood oftener, and *general* sangui-missions seldomer, than they do. Without going the length which Dr. Latham has here done, in urging objections to blood-letting, on several occasions, we think that his observations are entitled to attentive consideration, and may serve to prevent the improper effusion of human blood, while they are not, we believe, meant to restrain the active employment of the lancet, when the circumstances justly demand the depletory treatment.

Dr. Latham instances hysteria and epilepsy, where the contortions of the patients generally prevent venesection, as doing well enough without it. In cases of syncope, from all the various causes, "the same indiscriminate practice is too often pursued;" and the consequences, in debilitated habits, are often distressing.*

"In apoplexy, although it must be confessed, that blood-letting is seldom so injurious as in those other cases to which I have been alluding, yet, even here, the practice is by much too indiscriminate, and requires, in my judgment, more consideration than is usually bestowed upon it It certainly ought to make some difference in our practice, whether the patient be of very full or of very slender habit, although the custom of bleeding is religiously observed equally in both, and a fancied *threadiness* or *sharpness* in the pulse is usually considered as a sufficient justification for the immediate loss of blood, notwithstanding the sallowness of complexion, and the flaccidity of muscle may indicate any thing rather than plethora. The lancet however has generally been employed, without any regard either to such circumstances or even to the age of the patient, long before the physician has arrived, and the temporary relief which has been obtained, (for some benefit is commonly experienced in the first instance) is used as an argument for the repetition of the operation, and it is well if by talking about *local* fulness and oppression of the brain he can carry the point so far as to satisfy the bystanders that by leeches to the temples, or by cupping glasses to the neck, a sufficient quantity of blood may be taken more immediately from the neighbourhood of the affected part, than by any depletion from the more general circulation." 252.

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* It must be confessed that the moderns might plead the precept of the ancients, in the sweeping maxim of bleeding every one who falls down in a fit. Celsus seems to except from blood-letting only those cases where convulsions attend. "Ubi concidit aliquis, si nulla nervorum distentio accesit, ultique sanguis mitti debet." Lib. III. We do not hold this forth as an excuse for an indiscriminate blood-letting; but to shew that in all ages, men were prone to routinism.

Dr. Latham observes, that if a patient of corpulent habit, firm muscles, florid complexion, and a full feeder, be suddenly seized with a fit, corresponding to the usual definition of apoplexy, there can be no question, that large and immediate bleeding from the arm, temporal artery, or jugular vein, together with leeching, cupping, blistering, and other depletory means, would be proper.

"But, in systems directly the reverse, in constitutions flaccid and emaciated, it is surely contrary to sound discretion, that a *similar* mode of treatment should be instituted. It may be, indeed, from oppression on the brain, that the sudden apoplexy has supervened; but we should recollect that congestions may, also, sometimes arise from the *slowness* of the stream, and from the weakness of the impelling force. We should take the trouble of enquiring into the patient's constitution before we proceed to an operation, which, if misapplied, is fatal." 254.

Dr. Latham does not presume to lay down rules that can be applicable to every apoplectic case—"since circumstances must vary and determine the practice in almost every instance." But he thinks that, speaking generally, practitioners called to persons in what are termed fits, should be cautious of the lancet when "the patient is emaciated and the muscles flaccid."

From what has been said, Dr. Latham hopes not to be understood as meaning that, while he condemns indiscriminate bleeding, he is desirous that the physician should stand by and do nothing in such cases. Congestions may exist in the intestinal canal, causing pressure on the larger blood-vessels, and thus producing irregular accumulations of blood in different parts of the system—especially in the head, with all the symptoms of apoplexy. Or gazeous distention of the stomach may produce the same effect. In such circumstances, our author thinks, the prudent physician will evacuate the stomach and bowels (in cases of extreme debility) before he proceeds to empty the blood-vessels. In the mean time, he will have a fairer opportunity of judging of the case, and determining on the propriety of having recourse to local or general bloodletting.

What he has said of apoplexy, he conceives, is generally applicable to paralytic attacks. "The lancet has been employed here too, without due discrimination."

> "But, indeed, in these cases, the generality of medical practitioners are not very urgent to employ the lancet, commonly contenting themselves, with what may be termed, a fair depletion by the intestinal canal after one previous bleeding, and then flying at once into the opposite extreme of stimulants and tonics:—a practice which may be characterized as too general to be never wrong, but yet too mechanical to be always proper." 261.

Dr. Latham sums up the object of these observations in the following terms:—

> "That venesection is too generally employed, and the relief obtained from it, in the first instances, usually fallacious; that flaccidity of muscles, which depends upon the inanition of the vessels which nourish them, is a better criterion of the actual state of the vascular system, than the pulsation of the artery; and that the unequal distribution of blood, which, even in the weakest constitutions may affect the head, will, in such debilitated habits, be more safely and effectually relieved by other means of depletion, than by *general* bleeding." 262.

Taught by experience and observation, that a *routine* practice is dangerous—especially if of the *ultra* kind, we are advocates for cautious discrimination, in all doubtful cases; while we are the steady friends of energetic practice, wherever the indications point to such measures. Under these impressions, we recommend those who look too exclusively to the vascular system, in their pathology, not to contemn the admonitions of age and experience set forth in the foregoing observations.

Observations on Puerperal Insanity. By ROBERT GOOCH, M.D. Physician to the Westminster and City of London Lying-in Hospitals, &c.

THIS is a very ingenious and interesting paper, and one which we find extremely difficult to analyze. We must take a different course from that pursued by the very able author, in order to render the paper concise, and at the same time perspicuous.

Puerperal insanity attacks a few days, weeks, or even months, *post partum*—nay, it occurs before delivery. Its precursors are generally an increase of frequency in the pulse, sine causa evidente, restless nights, hurry and irritability of temper, wildness and incoherency of language, mania, with not seldom, an attempt at suicide. When it advances in the form of melancholia, it is more gradual, and commonly begins some months after parturition, with, first, a failure of memory, confusion of mind, irresistible and inexplicable depression of spirits, mournful and down-cast countenance, silence and thoughtfulness, self-abhorrence—ending in insanity, which does not differ, in appearance, from the disease in other states than the puerperal. When once begun, its duration is very various—sometimes subsiding in a few days, or even hours ; but commonly lasting some weeks or months. In most cases, life is not endangered, nor the intellect ultimately. No fatal case occurred in Dr. Gooch's practice, but some instances have come to his knowledge, in the practice of others. In the Salpetriere, one in fifteen have died of this disease. It is difficult, our author thinks, to distinguish puerperal insanity from phrenitis by the actual symptoms—the history of the case is the best mean of diagnosis.

In phrenetic affections after child-bearing, the patient had, in our author's experience, fever, pain, and throbbing in the head, with, at most, confusion of mind, being always able and willing to describe her feelings. "On the contrary, in mania, an irritable, incoherent mind was among the first symptoms of the disease."

The ETIOLOGY of puerperal insanity comes within a narrow compass. Almost all we know of it is—the puerperal state—but how or why, we are, as yet, ignorant.

> "Yet there is another cause," says our author, "which greatly contributes to the excitement of this disease—a considerable interruption to that mental tranquillity, so requisite during the susceptibility of the puerperal state—the frequent admission of boisterous persons into the lying-in-room, an officious, eager, irritable nurse, or relative, who, with the best possible intentions, is continually doing the worst possible things—sudden and violent agitation, domestic anxieties, and misfortunes have preceded, and apparently contributed to the appearance of the disease." 281.

Still, as all these things happen repeatedly in parturition, without subsequent insanity, there must be some peculiar predisposition or susceptibility in the brain or nervous system of the individual, called into action by the foregoing exciting causes.

TREATMENT. Our very able author lays down five indications under this head.

1. *Restraint against Suicide.* This can only be properly put in force by a nurse accustomed to the insane.

2. *Removal of Irritation from the Digestive Organs.* As the tongue is usually furred, the alvine excretions unhealthy, and the disease always aggravated, by even a tendency to constipation, purgatives, that will operate copiously twice or thrice, should be given every third day. This class of remedies is superior to every other.

3. *To watch the Circulation, especially the Vascular System of the Brain.* The most difficult question, in the treatment, is, Dr. G. thinks, when to bleed, or not to bleed? The result of our author's experience is, that when there was no evidence of determination to the head, the pulse deviating from its natural state, *only* in rapidity, (probably dependent on mental irritation) blood-letting, general or local, did *not* relieve the symptoms, while it rendered the patient less capable of enduring the exhausting influence of a protracted disease. When, however, the pulse is not only quick, but full and strong, the mental irritation is generally abated by tranquillizing the circulation. When this cannot be effected by *liberal* purging, and cold applications to the head, then a moderate loss of blood from the scalp or neck, by leeching or cupping, will be proper—and still more particularly so, if determination to the head be unequivocally evinced by flushing of the face, redness of the conjunctiva, throbbing and fullness of the carotid branches. Our author, and those, whose opinions he venerates, have come to the conclusion, that general blood-letting is seldom necessary or safe.

4. *To procure Sleep.* The want of sleep is one of the most distressing symptoms both in mania and melancholia. Experience has shewn the inefficacy of opium, even in large doses. The most useful soporific, with which our author is acquainted, is the tepid bath at bed-time, and a night dose of camphor and hyoscyamus, 10 grains of each. In the Quakers' Lunatic Asylum, meat suppers with porter, are often used as narcotics.

5. *Moral Management of the Mind.* During the violence of the disease, all reasoning is vain. But there is a period when an interview with relations, or such interpositions may be attended with beneficial effects. An interesting case, in elucidation, is here stated, which we shall notice in its place.

We have kept the *didactic*, or preceptive part of the paper uninterrupted by the *narrative*, or illustrative;—a plan which our ingenious author might probably have adopted with advantage. We shall now, however, sketch out some of those cases, which Dr. Gooch has interwoven with the body of the paper.

The first case narrated by our author, is one of catalepsy supervening on puerperal insanity. We shall considerably abbreviate it.

Case I. A married lady, 29 years of age, much disposed to hysteria, had had several premature labours, and only one living child. In a few days after her last delivery, in the seventh month of pregnancy, she was seized with violent head and face-ache, which subsided, leaving much flatulence of stomach, with quick, weak pulse, and depression of spirits, soon degenerating into unequivocal and violent insanity, during which she attempted her own life. These symptoms, in a few days, assumed quite another aspect. She was reported by her attendants to be in a trance or dying. Her physicians found, however, that the pupil was obedient to the light. Her eyes were open; but no movement of the chest, nostril, or other indication of respiration, was perceptible. The pulse (120) and temperature alone indicated life. We must regret that our author did not accurately ascertain whether respiration was entirely suspended in this case. That process may be carried on by the diaphragm, without any visible motion of the chest. We do not conceive that the heart would have acted long without its usual and necessary accompaniment, respiration. The lady was now raised so as that the trunk formed an obtuse angle with the limbs—and in that uncomfortable posture she continued many minutes, without support.

> " One arm was now raised, then the other, and where they were left, there they remained; it was now a curious sight to see her sitting up in bed, her eyes open, staring lifelessly, her arms outstretched, yet without any visible sign of animation; she was very thin and pallid, and looked like a corpse that had been propped up, and had stiffened in this attitude." 269.

She was now taken out of bed and set on her feet, while loud noises were made in her ears. " But she stood up as inanimate as a statue," although the slightest touch put her off her balance.

She went into this state three several times—the first fit lasting fourteen hours—the second twelve—and the third nine hours; with intervals of one and two days. The disease now resumed the ordinary form of melancholia, and in three months she was well.

Dr. Sutherland related to the author several other cases still more extraordinary—one, in particular, of a young lady who continued cataleptic several months, and was only preserved by great vigilance and management in feeding her. Another patient, a male, being suspected of imposture, was one day placed upright, at the edge of a cold bath, and at length gently pushed in. "He fell to the bottom, like a stone, and continued there without the slightest effort to save himself." This man ultimately recovered. We certainly should, at all times, discountenance these kinds of experiments on real or fictitious cataleptics.

The next case which we shall notice is brought forward by Dr. Gooch in illustration of the gastro-hepatic origin of the disease, and its successful treatment by purgatives.

Case II. A lady was seized with puerperal mania, a few days after the delivery of her first child, and which continued long and alarming, but at length she recovered. In her second pregnancy she was attended by Dr. Gooch, in London, and continued well for ten days, when a fire taking place in the neighbourhood, excited the disease a second time. Her nights were sleepless—pulse seldom beyond 100 and soft. "Her face was pale and sallow, and her eye yellowish, her tongue furred, and her bowels scarcely ever acted upon without medicine." Her head was shaved and cupped, without any evident benefit. She took brisk cathartics every second or third day, and in three weeks returned to the country well.

In about a year after this, our author was summoned to attend the third parturition. When Dr. G. saw her she was within a week of her accouchement. She was jaundiced, which the surgeon informed him was the case in her *first* confinement. The tongue was furred—the stools nearly black—the urine high coloured.

> "This was a state which it was desirable to correct for its own sake, but still more so when the influence which hepatic disorders have over the mind, even independent of the susceptibility of the puerperal state, was taken into the account, and it was at least a striking coincidence that her former attacks had been preceded by the same appearances. Pills were ordered, each containing one grain of calomel, and five grains of the myrrh and aloetic pill, and she was ordered to take one often enough to move the bowels three

times daily. One a day was sufficient—her tongue became clean —she lost the yellowness of her eye and complexion—the stools assumed a natural appearance, and she fell in labour about nine days afterwards, with her stomach and bowels in a natural condition; her friends, and the attendants who had witnessed her former illness, were long before they lost their apprehensions; but this time she passed through her confinement without the slightest appearance of her former disease." 287.

Dr. Gooch ingenuously confesses that this case is not likely to make so great an impression on others as on himself; and that he can excuse them for doubting whether the treatment was the cause of the escape. In the following case, however, there can be little question that the remedies employed were the cause of the striking relief experienced.

Case III. A lady, literary, talented, susceptible, was anxious to nurse her first child; but her nurse and surgeon thought she could not. Irritating discussions ensued, and puerperal mania was the result. Her skin was hot, her pulse was full, and above 100, her tongue darkly furred, her bowels confined, her stools excessively offensive and dark. A dose of calomel and jalap, with salts, procured a few evacuâtions, but produced little relief. She was therefore ordered still more active cathartics, which expelled a very large evacuation, nearly black, and horribly offensive.

"This was as usual discharged into the bed, without any notice on the part of the patient. It acted again an hour or two afterwards; but now the nurse, who was sitting by the bed-side, was surprised to see her turn round, and in a calm and natural manner request to be taken up as her medicine was going to operate; her waistcoat was immediately loosened, and she was taken out of bed, when she voided a stool of prodigious size, as dark and offensive as the first, and then walked back to her bed calm and collected." 290.

The physicians saw her a few hours afterwards lying on the sofa, perfectly tranquil, answering questions correctly, and manifesting no vestige of her former complaint, excepting some little strangeness of expression in her countenance, and a timidity in conversation. Her recovery was rapid and perfect.

The influence of the biliary organ on the mental functions was noticed by philosophers, physicians, and even poets, among the ancients; several of the moderns have also stated facts in support of this connexion. Within these few months

M. Bricheteau, an able pathologist, has published a memoir on this very subject, an analysis of which will be found in another part of this journal.*

The next case which we shall abstract is one to illustrate the beneficial effect of moral emotions on the alienated mind, at a certain period of the disorder.

Case IV. A lady, ætat. 28, of susceptible mind, but good constitution, became affected with melancholia a few months after her second accouchement, owing apparently to a frightful incident that had occurred towards the end of her pregnancy. Having weaned her child, gone to the sea side, and taken some tonic medicine, without benefit, her spirits became gradually more depressed, and nothing could persuade her that she had not some fatal disease.

> "One day it was cancer, another inflammation of the bowels: and to such a height did her apprehensions rise, that her husband was often brought home by some alarming message, and found her, with a solem air, and in a low whisper, giving directions to her servants whom she had assembled round her, what to say if she should expire before their master arrived." 295.

It was now evident that she was deranged. She was sent into the country, under proper attendance, and separated from husband, children, and friends. For several weeks she manifested no improvement, sometimes occupied with one notion, sometimes with another. At length one predominant hallucination absorbed all the rest. She was doomed to a public and disgraceful execution for her crimes—every noise she heard was that of the workmen preparing the scaffold—every carriage was that of the officers of justice assembling at the place of execution. But the worst of all was the disgrace and death of her children and husband, whose spirit haunted her. A white post at the back of the cottage was her husband's ghost, which, day and night, was whistling in her ears. Several weeks passed this way; but her husband at length determined on an interview. The scene which passed at this interview we shall give in the words of the husband.

> "As soon as I entered the drawing room, she ran into a corner, hid her face with an handkerchief, then turned round, looked me in the face, one moment appearing delighted at the thought that I was alive, but immediately afterwards assuming a hideous expres-

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* Quelques considerations de physiologie pathologique sur les rapports particuliers et reciproques qui existent entre le cerveau et le foie. Par M. Buricheteau. *Journal Complementaire, Sept.* 1820.

sion of countenance, and screaming out that I was dead and come to haunt her.

"Finding that persuasion and argument only irritated and confirmed her in her belief, I desisted, and tried to draw off her attention to other subjects; it was some time since she had seen either me or her children; I put her arm under mine, took her into the garden, and began to relate what had occurred to me and them since we parted; this excited her attention, she soon became interested, and I entered with the utmost minuteness and circumstantiality into the affairs of the nursery, her home, and her friends. I now felt that I was gaining ground, and when I thought I had complete possession of her mind, I ventured to ask her in a joking manner whether I was not very communicative for a ghost; she laughed; I immediately drew her from the subject, and again engaged her attention with her children and friends. The plan succeeded beyond my hope; I dined, spent the evening with her, and left her at night perfectly herself again." 300.

She had no relapse. Dr. Gooch does not mean to draw the conclusion from this case that violent mania is curable by conversation, but that there is a stage approaching convalescence, in which the bodily disease is loosening its hold over the mental faculties, and in which the latter are capable of being drawn out of the former by judicious appeals to the mind.

The remainder of Dr. Gooch's paper is taken up with an inquiry into "the grounds of the *prevailing doctrine* that mental derangement is a moral disease." We certainly were a little surprised to find Dr. Gooch stating the above to be a *prevailing* doctrine; for we believe that hardly a *pathologist* of the present day entertains any such opinion. This the readers of this journal need not be told; since hardly a number has issued from the press without containing the sentiments of enlightened authors on the subject, diametrically opposite to what Dr. G. supposes to be the prevailing doctrine.*

That the intellectual principle within us should be subject to disease like a liver or stomach, is quite absurd, whether we look upon that principle as an immortal spirit, or a mere function of the brain. To the materialist we need not address our observations, for he can have no difficulty in conceiving insanity to be a corporeal disease; but the Christian and Platonic philosopher seeing purely *moral* causes produce aberrations of the *intellect*, is naturally led to enquire how this can be a *corporeal* derangement. In the first place, we are to recollect that all the operations of mind are revealed *through* matter; although this revelation does not prove the identity of mind and matter. Does music prove the flute and the performer to be the same thing? We cannot possibly have music without an instrument, whether that instrument be an artificial contrivance of wood or wires—or natural apparatus, as the larnyx. It is so with the manifestations of the human soul. It must have a brain to manifest itself through. And as, in the case of the musician, a broken string or an obstructed tube will derange the operations of a Handel; so a corporeal disease of the brain, whether idiopathic in that organ, or symptomatic of other affections in the system, must inevitably derange the intellectual operations.

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* See for instance, the Reviews of Esquirol, Haslam, Burrows, &c. &c.

But if corporeal disease be the cause of insanity it does not follow that the corporeal disease itself results from material causes. A man takes up a newspaper and reads a frightful piece of intelligence respecting some of his family. The process of digestion in the stomach is instantaneously arrested and his tongue becomes dry and coated in a few minutes. Or an officer is publickly insulted, and, in the violence of his rage, becomes quickly *jaundiced*, delirious, and dies.* Now if a moral impression on the sensorium be capable of instantly disordering the functions of various distant organs, is it not likely to suffer in its own structure or functions, both by these primary impressions, and through consent with those other organs secondarily affected? Undoubtedly it is in this way *principally* that the sensorium becomes deranged either in structure or functions, and consequently incapable of manifesting correctly the operations of the mind or soul—in other words, insanity is *generally* produced by moral causes inducing corporeal disorder, and that corporeal disorder embarrassing the intellectual functions.

This view of the etiology and pathology of insanity leads, we believe, to the most successful treatment. As moral and physical causes combine in the production of the disease, so moral and physical remedies must be combined in the removal of it.

> "Sunt verba et voces quibus hunc lenire dolorem
> "Possis, et magnum morbi depellere partem." *Hor.*

The above, we believe, are the sentiments of the best modern physicians, and they are those which Dr. Gooch has in this paper laboured to maintain. No one can read the article in question, without being impressed with a deep conviction that its author possesses talents of a very high order, brightened and improved by careful observation and mature reflection.

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* "Un jeune militaire reÇoit un soufflet dans un lieu publique, et dans la fureur qui le transporte, il tire son epée pour percer celui qui vient de lui fare une insulte aussi grave. Presque au meme instant, il devient icterique, et bientot apres il est pris de fievre avec délire, et meurt au milieu de convulsions." *Bricheteau.*

Some observations on the Duodenum, with plates, descriptive of its situation and connexions. Extracted from the Gulstonian Lectures. By G. D. YEATS, M. D. F. R. S. Fellow of the Royal College of Physicians, &c. &c.

VERY little doubt can be entertained that the office of the duodenum is nearly, if not quite, as important as that of the stomach; and when we consider that it receives the secretions of two other organs (the liver and pancreas) one of which is liable to numerous derangements, there can be no question that this second stomach is the seat of a variety of ailments, both of function and structure, though not noticed in any of our modern systems of practical medicine. "Et quemadmodum usus amplissimus (says Hoffman, de duodeno, vol. iv. page 190) et longe maximus est illius; ita etiam si vitium vel defectus in illud incidit, si intemperie menstruales succi laborant, si debitus tonus hujus eximiæ partis læsus vel destructus fuerit; magna inde turbatio in universa corporis œconomia et ingens malorum proventus exsurgit."

As this is a very important subject, and Dr. Yeats's paper a very able one altogether, we shall be excused for giving not only a minute analysis of it, but for collecting observations that bear on this point of pathology from various other sources.

Dr. Yeats very properly opens this dissertation with some remarks on the physiology of the duodenal digestion. The pultaceous mass is passed from the stomach into the duodenum, with its solid parts in a diminished state of aggregation. It now becomes mixed with the secretions from innumerable glands, more particularly situated at the commencement of the duodenum. The chyme is thence propelled to the sacculated angle of the gut, where it is attached to the capsule of the right kidney. Here it receives the hepatic and pancreatic secretions, and undergoes a change by which is produced chyle. Dr. Yeats is inclined to attach some importance to the connexion of the duodenum with the colon, whereby the motions of the one are communicated to the other.

"In this way it is probable a great part of the evil arises, which takes place in constipation; for when the colon is much distended with hardened fæces, it must press with some force on the ascending part of the duodenum, thus still further impeding the progress of the contents of the latter which have also to rise against gravity, when the body is in an erect position or recumbent on the right side. For this reason, it is always adviseable, previous to giving an opiate glyster where there is violent pain and vomiting from a gall-stone sticking in the duct, especially if the bowels have not been recently evacuated, to direct an opening enema to be injected, to unload the colon of those contents which, by distending it, cause pressure on that very part of the duodenum where the ductus communis opens, and thus impede the passage of the stone into the intestine. Be it recollected too that this bend of the duodenum is exactly between the right kidney and the ascending part of the colon, and that therefore much distention of it would in fact force the duodenum against the hard substance of the kidney, and would contribute to obliterate its cavity by the pressure of its sides against each other." 330.

The duodenum is very peculiarly and securely situated. It is studded with glands, extremely vascular, and its nerves have an extensive communication with the rest of the body by connexion with the par vagum and great sympathetic, through the medium of the semi-lunar ganglia.

"It is the most important recipient in the human body, receiving more various kinds of ingesta than any other organ: and notwithstanding it is less than the stomach, it has a greater capacity than the other intestines except the colon. It was necessary that the stomach should not only be greater because it receives the food in the gross, if I may so express it, but on account of the large quantity of ingesta, particularly of liquids which is sometimes thrown suddenly into it. The duodenum on the contrary receives the food gradually through the pylorus, and in a small quantity at a time, and in a more homogeneous state." 335.

In a pathological point of view, it is evident, as Dr. Yeats observes, that the duodenum is as liable to all the consequences of imperfect digestion as the stomach, with the probability of their being more distressing in the duodenal affection, in consequence of the elaborate manner in which this intestine is constructed, and the important fluids poured into it. It is probable, Dr. Yeats thinks, that the duodenum may have considerable power to correct imperfections in the gastric digestion; but if imperfect digestion take place in the duodenum, it does not seem likely from their structure or functions, that any improvement can occur in subsequent portions of the alimentary canal.

The extrication (probably *secretion*) of gas is a very constant attendant on indigestion of our food. And from the situation and connexion of the duodenum, the distention this occasions must be productive of various distressing effects, both in the neighbourhood of the organ, and at great distances.

"The duodenal nerves come off from the right hepatic plexus, which also supplies the gall-bladder, biliary ducts, pylorus, pancreas and kidneys, and then they pass on to the substance of the liver; hence we see that duodenal distension will, by nervous connexion, (independent of mechanical effects) produce irritation in all these parts. The intestines have their healthy peristaltic action maintained by the nervous influence from the solar plexus, through the nerves distributed to their fine and beautiful vascular coat; an irritation of these nerves will not only cause spasm, but, by continuance, inflammatory action. The duodenum is extremely liable to the same effects: it is supplied with nerves directly from the eighth pair which communicate with the stomach and pylorus; thus besides the universal connexion between the par vagum and sympathetic, it receives some filaments from the semi-lunar ganglions and hepatic plexus; and as at its lower end it receives nerves from the superior mesenteric plexus which communicates with the renal plexus, it is clear how a morbidly irritated duodenum will produce uneasiness in nearly the whole of the abdominal viscera, causing irritation in the intestines, stomach, œsophagus, kidneys, the right particularly, liver, &c. &c. and as the hepatic plexus is formed from the semi-lunar ganglions, in which are concentrated not only the nerves which supply the chylopoietic viscera, but in which terminate those nerves which, in their progress from the brain, either give branches to, or inosculate with, nerves which supply the œsophagus, lungs, heart, diaphragm trachæa, larynx, pharynx, chest, muscles of the face, lower jaw, and neck; hence the headach, vertigo, contortions of the countenance, rolling of the eyes, asthma, cough, pains about the chest and shoulders, which accompany duodenal irritation. And that while oily emulsions and expectorants, which only add to the mischief, have been prescribed in such coughs and asthmas, medicines of a very different class should be given." 340.

Dr. Yeats might have quoted Hoffman in support of the above sentiments. Speaking of morbid biliary secretions in the duodenum, Hoffman remarks—" tenerrimas membranes duodeni flatibus distentas corripit, quæ dein in consensum trahunt diaphragma, plexus mesentericos stomachates, pneumonicos, et sic violenta fit tussis, quandoque cum vomitu et suffocationis metu, &c. **** Quandoque etiam affectus istorum succorum in duodeno primisque intestinis stagnantium usque ad caput se exurant, et cephalalgias, vertiginem, torpoem omnium sensium, imo apoplecticos insultus ibi machinantur."*

Here Hoffman relates some curious cases, and quotes others, illustrative of the various sympathetic affections of distant organs and parts, produced by irritating secretions in the primæ viæ—facts which appear *new* to some physicians of the present day, who do not look back a little among the works of the illustrious dead.

Dr. Yeats goes on to observe, that in addition to these distant symptoms produced by nervous sympathy, painful sensations of a more local nature, arising from mechanical pressure of the distended duodenum, will take place. Pain and spasm will then be produced; and pressure on the biliary and pancreatic ducts will obstruct the egress of their respective secretions, giving rise to soreness and sense of fulness at the pit of the stomach, and a jaundiced appearance of the skin. Under these circumstances, Dr. Yeats has no doubt, (indeed we know many instances of it) that patients have been salivated for disease of the liver, when this last organ was perfectly sound in structure, and only disordered in function, through consent with the duodenum.

> " Should it so happen, that calculi are contained in the gall-bladder, the pressure from the distended duodenum will cause additional pain by rubbing the rough stones against its sides. A great deal of pain will be felt across the back, and especially in the region of the right kidney, from the connexion which the duodenum has with its capsule, and a quantity of pale urine is often past, from irritation of the renal vessels, both locally and through the medium of the renal plexus of nerves." 343.

Dr. Yeats thinks, and not without reason, that all this distention and pressure must, more or less, obstruct the circulation of the bowel itself, and thus keep up an inflammatory irritation there. The portal circulation will also be impeded, and thus, plethora produced in the meseraic veins, with a varicose state of vessels in the legs, or hæmorrhoidal affections. These circumstances have been very pointedly alluded to by Hoffman.

> " Videlicet dum intestinum vehementer distenditur, non modo tunicæ, quæ exquisito sensu pollent, affliguntur, sed et rami plexus mesenterici tendunter; nec non, *vasis sanguineis compresis*, congestio sanguinis fit circa truncum venæ portæ, et initium arteriæ meseraicæ: sequitur hinc fixus in lumborum prima vertebra do-

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* De Duodeno, tom. iii. p. 192. fol. ed. *Genev*, 1761.

lor, præcordiorum anxietas, appetitus dejectio, somni et virium defectus, alvique abstrictio." *Hoffmani Opera*, *Tom.* IV. *p.* 191.

That accurate anatomist, and able pathologist, Mr. Charles Bell, observes thus:

> " We find that there are poured into the duodenum from the liver and pancreas, secretions which have an extensive effect on the system of the viscera; and we must acknowledge, that the derangement of these secretions must operate as a very frequent and powerful cause of uneasiness, and that the duodenum must often be the seat of disease and distressing symptoms. We may observe that, from the course of the duodenum, pain in it should be felt under the seventh or eighth rib, passing deep, seeming to be in the seat of the gall-bladder, and stretching towards the right hypochondrium, and to the kidney, and again appearing as if in the loins." *Vol.* III. *p.* 281.

We have seen two distinctly marked cases of duodenal disease, where pain in the *loins* was the most distressing symptom of all. Dr. Yeats next observes, that the duodenal affection soon leads to unhealthy discharges from the liver and pancreas, causing a great accumulation of irritating matter in the saculated portion of the duodenum, with torpor throughout the whole line of alimentary canal, and languor and lassitude of body. Dr. Yeats thinks, that the confinement of the duodenum at its termination within the ring at the root of the mesentery, will, also, increase the difficulty in the propulsion of the duodenal contents: consequently, at this point, the more indigestible fœcal portion of the food, may sometimes lodge, and produce a temporary obstruction of the passage. Our author has no doubt that, repeated absorption by the lacteals of the acrid contents of the duodenum, produces disease and enlargement of the mesenteric glands, and ultimately tabes mesenterica.

> " The liver, pancreas, and duodenal glands, will become diseased from congestion and irritation, and this irritation will be propagated by nervous communication to the brain; it will, sooner or later, run into inflammatory action and produce effusion there, or the irritation will chronically continue giving rise to spasms, convulsions, vomiting, contortions of the countenance, affections of the sight, violent headachs, faultering voice, chorea and palsy." 350.

The following symptoms in adults have been caused by duodenal disease, and have been mistaken for a liver complaint, to our author's knowledge. The appetite declines, or becomes capricious; flatulence is troublesome; languor and lassitude are considerable, accompanied by sense of weakness in the lower extremities, occasional chills, feverish heats, pain and sense of weight in the right hypochondrium and across the loins, torpid bowels with dark coloured fœces passed without being figured; urine of a mahogany colour, sometimes transparent, sometimes with a lateritious or white sediment, or thick like gruel and water; slight nausea; restless nights; white crusted tongue, brown towards the roots; occasional giddiness or headache, or affection of vision; pulse little accelerated—sometimes preternaturally slow, or intermitting—train of nervous symptoms. The food causes oppression—a dyspnœa, with, sometimes, a troublesome cough, adds to the restlessness of the nights—despondency, and, after some time, a yellow tinge in the eye, take place.

> "Upon examining patients with the above symptoms, a fulness and puffiness will be sometimes perceived to the right of the pit of the stomach. I say sometimes, because it will depend on the quantity of extricated gas confined in the duodenum, or upon the existence of morbid action at the time, whether this symptom be present or not. By pressure *on* the region of the liver no uneasiness will be complained of, but if the pressure be made with the edge of the open hand under the ribs with the palm of it flat upon the abdomen, considerable uneasiness will be complained of up towards the liver and down towards the right kidney, a soreness too is felt an inch or two to the right just above the navel. Such patients will trace with most anatomical accuracy, the course of the duodenum with their finger, from the stomach to the loins on the right side, and back again across the abdomen to the umbilicus." 353—4.

Under such circumstances, our intelligent author observes, that the general routine of giving a few doses of calomel and salts, and then stimulants and tonics, produces no permanent good effects, "for the duodenum relapes into its inactivity after a brisk purge," particularly of calomel. The stimulus of ammoniacal salts gives only temporary relief, and should spirituous liquors be resorted to, they increase the evil, and induce organic disease. "The preparations of steel create nausea; the simple bitter infusions lie cold and heavy on the stomach, and the addition of aromatic or spirituous stimulants do not remove the difficulty."

> "Notwithstanding, however, that bitters disagree, yet, when combined with a cathartic in such quantity as to give a gradual evacuating movement to the intestinal canal, they produce the happiest effects, ℈j. of quassia, and the same quantity, or ℈ij. or ʒi. rarely the last, of senna infused in a pint of boiling water for an hour, produce the composition I employ; f℥iss. of this infusion taken in the

morning and repeated at noon, with pil. hydrarg. gr. iij. every night for about a fortnight, most generally remove this uneasy state of the duodenum." 357.

Hoffman has given nearly similar counsel in these cases. "Itaque ubi ejusmodi causus incidit, non satis est, dictis remediis ægrotantem tractare, sed validiora adhibere oportet, quem in censum referenda *aperientia fortiora*, *salia*, *et quæ ex Rhabarboro*, *et mercurio dulci* constant medicamenta."

We have taken several occasions, in this Journal, to hint that, practitioners of the present day appear almost to have discarded *emetics* from their prescriptions, and depend entirely on purgatives. Yet we have seen such decidedly good effects from emetics, judiciously administered, that we cannot help recalling the attention of the profession to this almost exploded remedy. In the class of complaints under review, gentle emetics are often serviceable, and we recommend our brethren to reflect on the following sentence of the experienced Hoffman.

> "Quod praxin et viam medendi attinet morborum, qui in duodeno et prima regione sedem fixerunt, facile ex dictis apperet; emetica diligenter præparata et prudenter exhibita hisce morbis unice auxiliart. Emetica sunt generosa et valida remedia." *Opera, Tom.* III. *p.* 195.

Although somewhat out of place, yet we cannot help here observing, for the gratification of the Broussaian School, that Hoffman joins his testimony to that of Helmont, of Sylvius, and of Riverius, that the real seat of *fever* is in the primæ viæ —"nidus febrium est in *primis officinis*, extenditur scilicet à pyloro ad duodenum, &c." *Loco citato.* This is precisely the *new doctrine*, about which our continental brethren are so fiercely contending. We fear, however, that neither its novelty nor antiquity will enable it to do more, than "strut and fret its hour upon the stage," and then die away, perhaps to be again and again resusciated in future ages—

——————— ut unda impellitur unda,
Urgeturque prior venienta, urgetque priorem.

When this morbid condition of the duodenum is attended with feverish heats, and high-coloured scanty urine, our author adds to the bitter, instead of the senna, some neutral salt, particularly the sulphat of soda, which, he thinks, has a more specific effect on the duodenum, than the sulphat of magnesia. He gives a scruple twice a day in the quassia infusion, and three grains of the pil. hyd. with or without aloes, according to the state of the bowels. When symptoms of inflammatory action prevail in the duodenum, the saline draught, with sulphat of potash, and the blue pill alone, are highly useful. A proper attention to diet and exercise is necessary of course.

"It is here a matter of more than medical curiosity, to form a discrimination between a liver disease on one hand, and a simple dyspeptic state of the stomach on the other, as contra-distinguished from a morbid state of the duodenum simply. In some cases where the duodenal disease has existed for a considerable time, the diagnosis becomes almost impossible, although an experienced practitioner may form a very good opinion; because a morbid train of symptoms takes place, by which liver, duodenum, and stomach, are blended in one affection, emphatically termed, a disease of the digestive organs. In a simple disease of the stomach, we have very little swelling or puffiness in the epigastric region, and when it does take place, it is more to the left side. We have also, eructations of wind and of acrid matters. These circumstances vary very considerably in a diseased duodenum; a swelling is very apt to occur, the extricated gas finding a greater difficulty to escape, either by regurgitation through the pyloric orifice, or downwards, from the particular situation of the intestine at the mesenteric ring. There are, therefore, no eructations of wind or of acrid matters in a dyspeptic state of the duodenum; and when the puffiness is detected, it is a diffused swelling towards the right hypochondrium, being lost under the liver, and not extending to the left side, and circumscribed in that direction.

"A diagnosis between affections of this intestine and the liver is more difficult, on account of the latter being so readily affected by a disease of the former, particularly when a slight jaundice has taken place, not from a diseased liver, but from the bile not finding a ready passage into the ill-conditioned duodenum; an experienced physician must then form his opinion from the accumulation of symptoms, and from his recollection of similar cases. If the symptoms of a liver disease, particularly the yellowness of the eyes, tension of the side, and lateritious sediment of the urine, speedily disappear by the treatment, we may be perfectly satisfied that these hepatic symptoms are produced by duodenal irritation, and that the patient may be safely tranquillized on that ground by his anxious physician; if on the contrary, these symptoms are obstinate, and they seldom are without having so much disordered the general system as to awaken, very early, the suspicions of the physician, then that science and accumulation of facts, which taught him the discrimination, will immediately suggest to him the more active and appropriate remedies for the liver disease according to its kind and degree." 361-2-3.

But our limits are exceeded, and we must now close the analysis of a paper which does great credit to the acute observation of its very able and ingenious author. Two plates and some pages of explanation, conclude this interesting article.

Observations on the Hour-glass Contraction of the Uterus. By John C. Douglas, M. D. Licentiate of the College of Physicians, Ireland.

This is a very sensible paper, and we are convinced of the truth of the doctrine there inculcated, from many observations made in the early part of our obstetric practice, when we were in the habit of meeting—or rather *producing*, what are termed hour-glass contractions of the uterus, by officiously and awkwardly groping about in the dilated vagina, before the uterus had time to contract and detrude the placental mass.

Authors have generally attributed retention of the placenta to hour-glass contraction, morbid adhesion; or inaction, of the uterus. Dr. Douglas adduces it as his opinion, that the placenta is rarely, if ever, *primarily* retained by the kind of uterine contraction under consideration—"its formation (hour-glass contraction) being merely the result of the undecided manner in which the practitioner introduces, or attempts to introduce, his hand, with the intent to extract a placenta that had been retained by one of the other two causes."

Instead of the usual division of the uterus into fundus, body, and cervix, without any positive limits, our author would dispose of them thus:

> "I would so arrange them as to apportion $\frac{2}{7}$ to its fundus, $\frac{3}{7}$ to its body, and $\frac{2}{7}$ to the cervix. By this division, the upper and lower sections on the long diameter of the uterus, are of equal length; and the middle section is equal to one and a half of either." 386.

But as the uterus and vagina, at the period of delivery, form one continuous canal, our author would divide the combined two, into four portions, and of the entire, assign $\frac{2}{10}$ to the fundus, $\frac{3}{10}$ to the body, $\frac{2}{10}$ to the cervix uteri, and ^{3} to the vagina. In this arrangement we find the fundus and body to comprise the entire of the thick muscular substance of the womb, while the portion allotted to the cervix, partakes more nearly of the structure of the vagina. Instead, therefore, of considering, at the period of labour, the entire of the uterus as one organ, and the vagina as another, it would be more proper, Dr. D. thinks, to consider the fundus and body as one, possessing a common structure, and the cervix uteri and vagina as another, being, also, of a nearly common texture. The physiolgy of the parts countenances this arrangement. The functions of the cervix uteri, during labour, are the very reverse of those of the fundus and body. These last, exert a contractile and expulsive action, while the cervix relaxes in sympathy with the vagina. Our author remarks, en passant, that, in his experience, the protraction of labours has arisen more frequently, from "want of yielding elasticity in the cervix uteri and vagina, than from deficiency of expulsive action in the body and fundus. Here Dr. Douglas asks the practitioner if, in any case, after having overcome, what is termed, the hour-glass contraction, he has ever found the placenta in the upper chamber detached?—We can only answer for ourselves, that we never did. And we can well remember the painful stricture on our arm, while slowly and carefully detaching the placenta from the fundus uteri. If general experience shews (and our author thinks it will) that the adhesion, in question, always obtains, it will doubtless go far to prove, that the detention of the after-birth is owing to this, rather than to the contraction of the uterus. To account for this contraction, Dr. Douglas observes, that the practitioner, while searching in vain for the placenta, unconsciously irritates the lower edge of the thickly muscular part of the uterus into action:—

> "The hour-glass contraction is the usual result of this irritation; and, by the time the practitioner has discovered his error, a barrier is thus opposed to the further progress of his hand." 391.

Sometime after adopting the above *theory*, our author seized an opportunity, in a case of retention, to introduce his hand just within the cervix uteri, delaying it there designedly until "the uterine cavity gradually assumed the hour-glass form." He then quickly passed up his hand to the fundus, without allowing the constriction to close so much as to materially impede its progress.

It had always appeared to our author an enigma that this hour-glass contraction, as it is called, should be inherent in a circular band of fibres at the centre of the uterus, and that the same structure, both above and below this belt, should remain quiescent and relaxed.

> "But this stricture does not form from the middle circumference of the uterus; it is formed by the lowest verge of its thickly muscular substance at the line of demarcation of its body and cervix. Which line, in my arrangement of parts, is at an equal distance from the os externum of the vagina and the farthest part of the fundus uteri." 393.

From this it would appear that the upper chamber comprises the entire of the body and fundus, while the lower engages only the cervix and vagina, the two compartments being nearly equal in capacity. We shall sum up our author's conclusions in his own words, viz.

> "That the remote cause of the uterus assuming the hour-glass form, is a miscalculation of the distance (which is not less than fifteen inches) at this period, from the os externum to the fundus of the uterus.
>
> "That the exciting cause is irritation, produced either in the vagina, by injudicious pulling at the umbilical cord; or, in the cervix uteri, by the accoucheur's hand searching there in vain for the placenta.
>
> "That the proximate cause is the spasmodic constriction of the muscular fibres of the uterus at the lower verge (not at the centre) of that section termed its body, and just where it ceases to be thickly muscular.
>
> "Thence I conclude that this hour-glass contraction is not produced by any principle of action inherent in the uterus itself; and that whenever it does occur, it is caused by mismanagement.
>
> "Therefore, in order to avoid such occurrences, the practitioner should always refrain from exciting unnecessary irritation.
>
> "And, in those few cases of unavoidable retention of the placenta, wherein it may be necessary for the accoucheur materially to interfere, he should, having first cautiously inserted it within the vagina, push his hand briskly up to the very fundus of the uterus. And, in this operation, he should direct the hand forward towards the umbilicus; ever bearing in recollection that the axis of the uterus, as well as the axis of the pelvis, inclines at a considerable angle to the axis of the trunk of the body." 397

Our author's reasonings appear to us not only ingenious but solid; while the practical indications which result from them are useful and safe to act upon.

On the Necessity of Caution in the Estimation of Symptoms in the last Stage of some Diseases. By Sir HENRY HALFORD, Bart. M. D. F. R. S. Now President of the Royal College of Physicians.

PROGNOSIS is by far the most difficult branch of medical science. To distinguish one disease from another, or to treat the complaint when known, is comparatively easy; but to say how a disorder will terminate, especially when it has advanced far, and already menaced life, requires the judgment of a master—of a man long conversant with the vicissitudes of disease, the extent of Nature's power, and the resources of human art. That old age too often generates a degree of caution bordering on timidity, in the physician, is not to be denied, but to be regretted as one of those inevitable failings of our nature that mark the hand of Time desolating the mansion of Thought, and enfeebling the energies of the soul. There is, however, another species of caution, not seldom confounded with the foregoing by the precipitancy of youth, the temerity of inexperience, or the arrogance of ignorance. It is that prudential reserve in delivering a prognosis which is grounded on a knowledge of the uncertainty of events, and the fallacy of appearances, acquired by long and careful habits of reflection, amid scenes of sickness and death. This is the species of caution which is recommended to our notice by a man who has arrived at that period of life when the judgment is matured by experience, but unimpaired by years. It is a caution, from non-attention to which we have often felt the mortification arising from false predictions—and the misery of having inspired hopes when ruin was impending, and despair at hand. We presume then, that every man who has any regard for his professional character and moral feelings will ponder with us on the following observations which Sir Henry Halford has offered to his medical brethren.

Our author truly remarks, that it is of great importance to be able to foretel the issue of a disease. When it is of a fatal nature, and this is not stated to the friends, their grief is rendered doubly poignant by the idea that the physician himself was taken by surprize, and therefore probably had not made use of all the resources of his art, by which the catastrophe might possibly have been prevented. On the other hand, a prudent and feeling disclosure of his apprehensions would have mitigated the sorrow of the relatives, whose conclusion would be that every thing which skill could suggest had been done to avert the hand of death. Sir Henry Halford properly observes, that the art of physic is so far conjectural, as all reasoning must be, which presumes on what *will* happen from what *has* happened—the only legitimate reasoning of which the science of medicine, in common with many other sciences, admits.

" And it suggests therefore, the necessity of recording facts, carefully ascertained by repeated experience. Were this done by every physician of extensive practice, what appears extraordinary in a single instance, would become familiar by repeated observation, and the difficulty of prognosticating would be materially diminished; to the great credit of physic, and to the satisfaction of its professors." 400.

Our author remarks that, towards the close of some disorders, both acute and chronic, especially where the constitution has had a violent and protracted struggle with the disease, appearances present themselves of a very equivocal and delusive nature, with which the issue of the malady does not correspond. Here Nature appears to pause for a moment, after the disease has done its worst—the frame is exhausted by its own efforts, and a general tranquility pervades the whole system. The eager wishes of friends are apt to misconstrue this condition into the commencement of recovery, especially as the patient generally admits that he is better, having lost some of his sufferings. The physician here must be cautious how he indulges the same lively hopes, lest he compromise his character, and aggravate the feelings of the family.

Sir Henry has seen this fallacious truce in four or five instances of phrenitis. We shall give the following case in the words of our able and experienced author.

> " A young gentleman of family, about twenty-five years of age, took cold whilst under the influence of mercury. The fever increased daily until it was accompanied at last by so much excitement and delirium, as made it necessary to use not only the most powerful medicines, but also personal restraint. At length, after three days of incessant exertion, during which he never slept for an instant, he ceased to rave, and was calm and collected. His perception of external objects became correct, and they no longer distressed him, and he asked, pressingly, if it were possible that he could live? On being answered tenderly, but not in a way calculated to deceive, that it was probable he might not, he* dictated most affectionate communications to his parents abroad, recollected some claims upon his purse, " set his house in order," and died the following night. The reason why so unfavourable an opinion was entertained of his state, was, that the apparent amendment was not preceded by sleep, and was not accompanied by a lower pulse, two indispensable conditions on which only a notion of real improvement could be justified But here was merely a cessation of excitement occasioned by a diminution of power, and by a mitigated influence of the action of the heart upon the brain." 404.

It is notorious, as Sir Henry Halford observes, that, in inflammation of the bowels, mortification often follows a cessation of pain; but in that partial inflammation produced by a strangulation of a portion of bowel in hernia, how often have we occasion to deplore the broken hopes of relatives after a surgical operation had promised that all was well. It is an invariable, and we think very prudent, rule with our author, still to consider life in jeopardy until the intestines again perform their functions, the stomach is free from irritàtion, and the skin remains universally and agreeably warm.

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* " My friend Dr. Heberden, when I mentioned this case to him, shewed me a note which his father had received from a patient, written in the interval of the subsidence of a paroxysm of phrenzy and his death, which happened about fifteen hours afterwards. The note is of some length, and is written correctly.

See the chapter of Aretæus on the Καυσος, as remarkable for the sublimity of the ideas which it contains, as for the beauty of the ionic Greek in which they are expressed."

An abscess in the liver, connected with gall-stone, sometimes assumes the type and character of an intermittent fever, and may be incautiously mistaken for, and treated as, this last affection. The preceding hepatic inflammation—the violence of re-action in the second stage—the affection of the brain, amounting to an apoplectic stupefaction—the deep brown tinge of the skin in the paroxysm—these will enable the attentive physician to discriminate the periodical accessions of fever, in hepatic abscess, where they occur, from common miasmal intermittent. Our experienced author saw three instances of this masked disease, two of whom died in the fourth paroxysm—the life of the third was protracted a fornight, in consequence of the abscess bursting into the channel of the intestines, and the matter passing off in large quantities by stool.

In hydrothorax Sir Henry Halford cautions the physician to be on his guard, when delivering an opinion in the advanced stages of the disease. A material mitigation of the dyspnœa generally takes place when the legs swell, and may thus induce the medical attendant, as well as the patient and friends, to entertain too sanguine hopes that the hydropic affection of the extremities is the only remaining malady to combat. Our author remarks, "that if this swelling of the legs disappear without an increased discharge of urine, the patient generally dies very soon, and most frequently suddenly. Wheras, if an ample increased secretion by the kidneys *follow* the relief of the dyspnœa, then every good hope of a temporary recovery, at least, may fairly be entertained, though it should be acknowledged that this species of dropsy, above all others, is most apt to return."

The confluent small pox, in a certain stage, requires, our author observes, a guarded prognosis.

> "The physician may fairly acquiesce in the fears of a family, when, on the completion of the eruption, he sees the face and breast one mass of disease, and may most reasonably doubt the capability of the constitution to maturate and perfect so large an eruption. But he must not hold out unfounded hopes to the parents if the malady proceed in the next stage, in a most satisfactory manner,

beyond his expectations;—the pustules ripening fully, and the process being complete—for alas! at this very moment it may be, the patient is sinking—is dead! the powers of his constitution being exhausted by the efforts it has made, and no longer equal to the accomplishment of a protracted cure." 408.

Analogous, in some measure, to the maturation of variola, is the reparation of skin when extensively destroyed by fire. Our author has seen several instances of this kind, four of which proved fatal, "and yet, in every one of the four, the wound had healed, with the exception of the space only of a crown piece." Two of these died, "no warning given" by any particular symptom of danger. Prudence, therefore, will induce the practitioner to consider the patient in some danger, after extensive burns, till the wound has been entirely healed for some time, and the constitution has recovered its usual energy.

Of paralysis of the kidney, Sir Henry Halford has only seen five instances in a practice of twenty-seven years. The last happened about two years ago, and as it was an exact copy of all the others, we shall introduce it in the author's own words.

"A very corpulent robust farmer, of about fifty-five years of age, was seized with a rigor, which induced him to send for his apothecary. He had not made water, it appeared, for twenty-four hours; but there was no pain, no sense of weight in the loins, no distension in any part of the abdomen, and therefore no alarm was taken till the following morning, when it was thought proper to ascertain whether there was any water in the bladder, by the introduction of the catheter; and none was found. I was then called, and another inquiry was made, some few hours afterwards, by one of the most experienced surgeons in London, whether the bladder contained any urine or not, when it appeared clearly that there was none. The patient sat up in bed and conversed as usual, complaining of some nausea, but of nothing material in his own view; and I remember that his friends expressed their surprize that so much importance should be attached to so little apparent illness. The patient's pulse was somewhat slower than usual, and sometimes he wss heavy and oppressed.

"I ventured to state that if we should not succeed in making the kidneys act, the patient would soon become comatose, and would probably die the following night; for this was the course of the malady in every other instance which I had seen. It happened so; he died in thirty hours after this, in a state of stupefaction." 412.

All the patients of this kind were fat corpulent men, between fifty and sixty years of age; and in three of them "there was observed a remarkably strong urinous smell in the perspiration twenty-four hours before death." The smallest quantity of urinary secretion, in such cases, should inspire hope, Sir Henry thinks, since it is surprizing how trifling a measure of that excrementitious fluid is compatible with life and even health. "But the cessation of the excretion altogether, says our author, is universally a fatal symptom, in my experience, being followed by oppression on the brain."

Practitioners who are anxious to discharge their arduous duties, with honour to themselves, and satisfaction to their employers, will do well to bear in record these admonitory hints, (the fruit of long experience) from a man whose talents, erudition, and amenity, have conducted him with honour, and apparently without an enemy, to the enviable summit of his profession.

Case of Death by Poison, wherein impregnation had taken place, and the Ovum was detained in the Ovary, with an Engraving. By Edward Stanley, Assistant Surgeon, &c. &c. at Bartholomew's Hospital.

This is an interesting account of an extra-uterine fœtation by that accurate and zealous young surgeon and anatomist, Mr. Stanley. The unfortunate female had put an end to her existence by laudanum, and the general appearances, *post mortem*, are minutely detailed by our author. These we shall pass over, and come to the uterine system. The uterus itself was larger than usual, its substance being soft, and its internal surface covered by a layer of a yellowish white colour, of soft and spongy texture; exhibiting the usual characters of the decidua. The fallopian tubes were enlarged and remarkably twisted. The left ovary was larger than the right, and at its posterior part was a rounded prominence distinct from the general fulness. The external membrane of the ovary did not shew any appearance of aperture. On this being divided, a distinct cyst was exposed, and within the cyst an ovum. The chorion and amnios were perfectly distinct, the cavity of the latter being filled with a yellowish honey-like matter, but no fœtus could be found.

Mr. Stanley concludes with some important jurisprudential remarks on the proofs of impregnation, before the ovum can be distinctly seen. The existence of a corpus luteum is no longer held as conclusive evidence, since excitement of the ovaries, from passion or unfruitful connexion, is sufficient to rupture the vessels and produce corpora lutea. Neither is the decidua in the uterus proper evidence, since that is produced, as our readers know, in some cases of difficult menstruation. Our opinion must be formed from a review of all the circumstances appertaining to the condition of the uterus, ovaries, and fallopian tubes—always recollecting, however, that nothing short of the actual inspection of the ovum can be regarded as decisive testimony upon the subject.

We have now, we hope, presented to the profession a full and impartial analytical delineation of this volume, and thereby enabled the public to form a just estimate of its value as a whole. We are persuaded that our brethren at large will feel grateful to the contributors to the work, collectively and individually; and that, with us, they will hail with pleasure its annual or biennial returns, and deplore the slow pace of a quinquennial revolution.

AFFECTIONS
OF THE
MUCOUS MEMBRANE OF THE DIGESTIVE ORGANS.

1. *Histoire des Phlegmasies, ou Inflammations Chroniques. Vol.* II. *De L'inflammation de la Membrane Muqueuse des Voies Digestives.* Par F. J. V. Broussias.

2. *Researches on the Pathology of the Intestinal Canal. On the Diseases of the Mucous Membranes.* By John Abercrombie, M. D. [*Ed. Journal*, 84.]

3. *Sur la Structure de la Membrane Muqueuse des Intestins dans l'Homme et dans quelques Animaux.* Par M. Mekel, Professeur à l'Université de Halle. [*Journal Complimentaire, Septembre* 1820.]

4. *Sur les Phlegmasies Folliculaires.* Par le Docteur Aime Grimaud. [*Journal Complimentaire, Decembre* 1820.]

"Inflammatio quidem, ubicunque sit, non sine periculo habenda; periculosior tamen, ubi membranaceas occupaverit partes, ob exquisitum, quo pollent, sensum ac concensum gravissima et funesta simul symptomata adsociantur." *Hoffmani Opera, Tom.* III. *p.* 223.

In the second number of this Series, we took up the subject of the *serous*, or peritoneal coverings of the intestines and abdominal organs generally*—in the third number, the *mucous* membrane of the lungs—and in each, we endeavoured to convey, as far as possible, to our brethren in this country, the opinions and observations of M. Broussais, one of the most celebrated pathologists on the Continent. It is, however, on affections of the mucous membrane of the *digestive organs* that M. Broussais has most distinguished himself; and this consideration, together with the great importance of the subject, will lead us into a pretty extensive analysis of the second volume of this illustrious foreigner, while we shall, at the same time, endeavour to collect and concentrate valuable information as much as possible, from other authentic sources, on the portion of pathology now under investigation.*

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* See Electic Repertory for January and April last.

M. Broussais justly observes that, when we consider the number and variety of extraneous substances, more or less stimulant, which are constantly traversing the mucous membrane of the digestive organs, it is really wonderful that we have not more frequently the phenomena of inflammation produced there. But, if we reflect on the exquisite sensibility of many portions of this membrane, and the numerous sympathies which subsist between it and almost every other part of the frame, we shall be convinced that, although actual inflammation is less frequent here than in the mucous membrane of the lungs, yet, that the morbid phenomena resulting from *irritation* in the primæ viæ, are infinitely more numerous and distressing than all the rest of the catalogue of human diseases collectively. We have, says M. Broussais, continually before our eyes, whole crowds of people who spend their time in tormenting the stomach with every thing burning and irritating which the animal and vegetable kingdoms can produce; and our books of pathology are filled with discussions of gastric and bilious derangements. If a drunkard dies of inanition, from defect of digestion, we are told of the loss of tone, or induration of the fibres of the stomach:—If he becomes dropsical—or dysenteric—the same explanation. Yet if we examine the symptoms exhibited by this class of patients, we shall find them correspond exactly with what Pinel, in his *Nosogra-*

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* The critical expositions of M. Broussais' doctrines which have been drawn up in France, and re-published in England, convey little or no idea of the valuable facts and observations on which those doctrines are founded. They are shadowy insubstantial outlines magnified by generalities, but devoid of all useful and tangible particulars. Like criticisms in general, they have separated the grain from the chaff—leaving the grain behind. On coming to the examination of M. Broussais' work after perusing these *exposes* we found ourselves utter strangers to the real nature and true value of the publication. We are much mistaken if most of our readers are not in the same predicament.

phie Philosophique, has laid down as characterizing chronic inflammation of the stomach and bowels.

Of the four phenomena exhibited in the living body, during inflammation, two only can leave traces in the dead—these are, *redness* and *swelling*—ulceration being a consequence of these. Whenever M. Broussais discovered these traces in the mucous membrane of the stomach, *post mortem*, he made diligent enquiries whether the other two phenomena, *heat* and *pain*, had been presented during life. In a great majority of instances this was found to be the case; but when it was doubtful, Broussais examined very strictly, other patients similarly affected with those who died, and he constantly observed proofs of a morbid increase of sensibility in those tissues which, on dissection, shewed redness and tumefaction. Here then were three of the phenomena of inflammation unequivocal; and as to the fourth—*heat*—it is not easy to ascertain its presence in *chronic* inflammations. It was, however, evidently developed when any irritating substances were taken internally.

Thus then, M. Broussais adds, the signs of phlogosis of the internal surface of the stomach are, 1^mo^ during life, certain lesions of function referrible to a surplus or morbid sensibility of the mucous membrane—2^ndo^ On dissection, redness and ulceration of this tissue.

M. Broussais is well aware, indeed, that many physicians will refuse the name of inflammation to the above mentioned redness of the membrane—unless it is arrived at a high degree of intensity, and accompanied by pyrexia. To these objections he replies by an ample presentation of facts, in which the links that unite the most evident with the most obscure gastric plegmasiæ may, he thinks, be readily recognized. Our author then details the histories and dissections of twenty-seven cases, occupying between sixty and seventy pages of the second volume, before he enters on the regular description, etiology, pathology, and treatment of the disease. We shall follow an inverse order;—first presenting an analysis of the didactic and descriptive part, and then selecting a few examples in elucidation of principles embraced or assumed.

I. *Etiology*. A phlogosed state of the mucous membrane of the digestive organs in general, is produced by whatever throws an undue degree of excitement on that tissue—principally by the impression of the atmosphere on the external, and aliments on the internal, surface of the body. Previous disease also may sometimes excite this affection. The etology differs somewhat according to the gastric or intestinal seat of the disease. Thus our author conceives that the *predisposing* causes of gastric phlogoses are such things as tend to accumulate the susceptibility or excitability of the tissue, whether by a *general* action on the system, or a *local* one on the organ itself. The *former* is exemplified by atmospheric heat—the *latter*, by the introduction of alimentary substances which have the property of keeping a greater degree of action or excitement in the stomach than is consistent with the general harmony of the system.

In respect to those predisposing causes which act on the system generally, M. Broussais makes several important observations on the heat and electricity of the atmosphere. The *former* of these agents renders more excitable the living fibre, and under high temperature reaction is more energetic than in low. When high temperature, however, is long-continued, or very great in degree, the excitability loses in power by exhaustion. Hence, old residents in tropical and other hot climates have a more languid circulation, and less reaction, in acute diseases, than the inhabitants of hyperborean latitudes. Our author believes that, although the stimulus of atmospheric heat on the skin causes an increased secretion from that extensive surface, and consequently draws an over-proportion of fluids towards the periphery, yet that the irritability of the mucous membrane of the primæ viæ is, at the same time, increased, and rendered more liable to take on inflammatory action, when stimulants or irritants are improperly applied. M. Broussais admits that, under these circumstances, there is a corresponding increase of the biliary secretion—but considers it as the *effect*, and not the cause of irritation in the mucous membrane—" et la surabondance de la secretion bilieuse, autre *effet* necessaire de l'irritation de la muqueuse." We look on the phenomenon in quite another light—we consider the increased secretion of bile as the effect of increased stimulation on the surface—and the irritation in the primæ viæ as often the effect of this redundant and vitiated biliary secretion. We are glad to find the *fact* (however explained) confirmed by the testimony of a Broussais, who is equivalent to a score of closet sceptics among our fire-side travellers and practitioners of the present day.* Our author's reasonings on the action of electricity in predisposing the mucous membranes to phlogosis, are not very clear to us, and therefore we shall not bewilder ourselves or our readers by noticing them.

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* Our intelligent readers need not be told that all extremes approximate, and that intense cold, and more especially alternations of cold and heat, by driving the blood occasionally from the surface to the interior organs, produce the same effect as intense heat, in disposing to visceral inflammation.

The predisposing causes which act *directly* on the stomach and bowels, are, as we before said, the stimulating substances swallowed by the mouth, for whatever purposes. These may produce phlogosis of the mucous membrane, even without the aid of predisposition from atmospheric causes acting on the surface. The following passage may be perused with advantage by more than our colonial readers.

> "If men would take care to diminish the stimulants which they swallow, in proportion to the increased excitability of the stomach produced by the atmospheric heat of our summers, or of tropical climates, until they became *acclimatés*, they would assuredly escape inflammatory affections. But when they sit down to table, they forget the precepts of Hygiene. They will retrench nothing from their former habits of indulgence. They swallow the same quantities of meat, spices, wine, coffee, liqueurs, as though they lived in the frozen zone, or their stomachs were in an ordinary state of excitability. Nay, such is the force of prejudice, that they consider this regimen as necessary to resist the debilitating effects of the climate! If, after an incendiary repast of this kind, a devouring thirst is kindled up, they would, if possible, quench it with more wine and spirits; but happily Nature compels them to have recourse to simpler fluids—and thus the antidote is every day opposed to the poison." Tom. II. *page* 191.

Our author goes on to enumerate the long list of "dishes tortured from their native taste," and inebriating liquors which especially among the predisposed, lead, sooner or later, to inflammatory affections of the digestive apparatus. In this list he very properly includes also the farrago of stomachic tinctures, and quack medicines which the credulous and unwary are constantly pouring down their throats, for the *purpose* of relieving, but actually with the *effect* of aggravating the states of irritation prevailing in the chylopoietic organs. Among the predisposing causes also may be classed unpleasant emotions of the mind, especially grief.

It is almost needless to say, that these *predisposing* causes, if long continued, or excessive in degree, become *exciting* causes of the inflammatory state. What has been said of the predisposing and exciting causes of gastritis will apply, as nearly as possible, to enteritis. M. Broussais makes many acute observations on the effects of atmospheric impressions, and the reception of miasmal impregnations in the system, in the production of diarrhœal and systematic affections; but his remarks are familiar to the English, who have long ago investigated these points. It may be proper to state, that M. Broussais considers dysentery as neither more nor less than inflammation of the mucous membrane of the intestines—and he makes an increased secretion of bile an occasional cause of the disease—an assertion that convinces us he never laboured under dysentery himself, or examined with care the stools of many dysenteric patients. Till within these few years an increased secretion of bile was considered the sole *cause* of cholera; but now it is pretty well proved, that it is a mere *effect*, and sometimes not at all present in the disease. In his etiology of irritation and phlogosis of the gastro-intestinal lining, M. Broussais includes almost every thing which we place in the etiology of fever, as the effluvia from crowded bodies of men, unhealthy food, depressing passions, great fatigue, poverty, &c. &c. This must be carefully borne in mind; for the reader is to recollect, that we are not exclusively on the subject of common unequivocal gastritis, especially as effecting the *peritoneal* covering of the organ, but on those irritated or phlogosed states of the *inner* surface of the digestive tube, accompanying (whether as cause or effect) a great portion of what are termed idiopathic fevers. The reader may not go the whole length of M. Broussais' doctrines; but it will be highly to his advantage to study with the profoundest attention, and divested of prejudice, the contents of this analysis. We shall now proceed to the development of symptoms in these phlogoses of the mucous membrane of the digestive tube.

II. *Symptomatology of Gastritis.* The first premonitory symptom is generally a sense of heat in the region of the stomach, during gastric digestion—at first, of a rather agreeable kind, ceasing when the stomach is empty, and succeeded by a farther craving for food. After these prelusive phenomena have continued for some weeks, or even months, according to the intensity of the causes, the person begins to perceive that this sense of gastric heat becomes unpleasant, and is coupled with a sympathetic heat of the skin, which is dry and rough. The tongue becomes dry and hotter than natural, with slight sore throat, broken rest, nervous irritability, heat and pain in the head. Now commences a kind of aversion to animal food and fermented liquors—sometimes thirst. When the disease sets in unequivocally, after these premonitions, it exhibits two forms, determined, as it would seem, by temperament.

A. *Acute Gastritis of the Mucous Membrane.* The first symptom is sometimes a violent vomiting, resembling cholera morbus. The patient throws up every thing that he swallows; then bilious, mucous, or even sanguineous looking matters; going very frequently to stool at the same time. Fever is a necessary accompaniment of this form of the disease. Sometimes gastritis declares itself without vomiting—but always with violent pyrexia, not preceded, in Broussais' experience, by a cold stage or shivering. The patient complains of a burning internal heat, and generally of a soreness in the pharynx. The tongue appears red and clean, or covered with mucous, except when the patient has been some time without drink. The thirst is considerable—the desire for cold acidulated drink is as great as the aversion for every other kind of liquid. If the phlogosis does not extend to the intestinal tube, there is constipation.—If it reach the colon, there is diarrhœa with tenesmus. There is deep-seated pain in the epigastric, and especially in the right hypochondriac region, but not exasperated without a certain degree of pressure. This pain is sometimes lancinating, and accompanied by a sense of constriction. It manifestly diminishes after the patient has swallowed cold aqueous drink, especially if acidulated. Very often the vomiting ceases, in a few days, although the other symptoms persist. At other times it continues or supervenes, in the course of the disease, and the patient is harrassed with constant nausea, which appears to him to be occasioned by some globular body rising upwards, and painfully compressing the lower part of the chest. Each fit of vomiting is followed by a temporary ease, of very short duration, the patient incessantly demanding emetics—a symptom still more common in peritoneal inflammation than in acute gastritis. The absolute impossibility, which the patient supposes, of swallowing any thing, appears referrible to the contracted and highly irritable state of the upper orifice of the stomach. Such are the principal symptoms in acute gastritis; but several of them may be absent—even pain itself does not exist, in some cases, where the inflammation is most intense. Our diagnosis must therefore be assisted by a rigid observance of the *sympathetic* troubles produced by this phlogosed state of the mucous membranes of the digestive organs. The *first* class of these appertains to the head, affecting the functions of the senses, and and the movements of the voluntary muscles. Head-ache may or may not exist. Aberrations of the intellect, corresponding with the moments of greatest suffering, are more steady in their appearance.

"I have seen," says our author, "men as completely delirious as in fevers the most malignant, or phrenitis itself." In such cases too, we often see the conjunctiva red, the eye inflamed, and the features altered. In proportion as the disease advances, and the sufferings increase, the attention becomes estranged, till coma ensues. In the mean time we observe irregular contractions of the facial muscles, grinding of the teeth, subsultus tendinum, and various convulsive movements. The patients throw off the bed-clothes, when they are sensible, complaining that the internal heat which devours them is ten times more insupportable when the chest is covered. They try all kinds of positions in bed; sigh deeply; and shew in their countenances the expression of intense agony. If they are questioned respecting the nature and seat of their pains, they apply the hand to the epigastric region, but cannot clearly describe their sufferings—the sense of internal burning is the only one which is distinct to them. We must therefore ground our diagnosis on the tout ensemble of the symptoms, and especially on the instantaneous relief produced by cooling drink. The muscular force is not *exhausted* in these cases, for the strength is quickly recruited after a crisis—which is not the case in those malignant and typhous fevers resulting from deleterious miasms.

In respect to the *respiratory system*, we observe sometimes a cough, with teazing pain; a glairy or mucous expectoration streaked with blood, or white, like that of peripneumony, at the period of resolution; a general pain in the chest; a laborious respiration in sanguineous subjects. The voice is often lost from a sympathetic paralysis of the laryngeal muscles.

During the first days of acute gastritis the pulse is full, hard and often as strong as in pneumonia, particularly if the pectoral symptoms abovementioned are present—a proof of sanguineous plethora in the pulmonary parenchyma. In lighter shades of gastritis, and when the vital powers have been reduced by pain, the pulse is sharp, irregular, or even intermittent—towards the close of life imperceptible. Heat of skin is considerable, during the violence of the acute stage. M. Broussais has always found it dry and harsh. The skin is cold when the disease is on the decline—and cannot be brought to a natural warmth when the disease is verging to a chronic state. The cutaneous secretions are suppressed; and the breath is fetid in a few days after the circulation becomes much increased.

B. *Chronic Gastritis.* This may be a primitive affection, or the sequela of an acute attack. It is produced by the same causes as acute gastritis; but from peculiarity of constitution, or force of cause, it is unaccompanied by those violent commotions in the system which arrest the attention in the other species.

"The patient complains of pain across the base of the chest, deep-seated in the epigastric and hypochondriac regions—generally more considerable in the right side, and sometimes so high up as to be thought in the chest. This pain is constant and very troublesome—sometimes burning, lancinating, pricking, and confined to a very circumscribed spot, especially when the stomach contains any acrid or irritating substances. It is very frequently accompanied by a sense of constriction. Some patients complain of feeling as though a ball of large size were pressing against the diaphragm—others as if a bar were fixed across the stomach, preventing their swallowing food or drink. Of all these sensations the lancinating and stinging pains are those which acquire the greatest degree of intensity. The others are so faint that the patient seldom demands relief from them till the strength becomes considerably reduced." 214.

The appetite always fails, and when the disease exists in its greatest degree, there is a general abhorrence of food. When there is any remains of appetite, the digestion is quite imperfect. Aliments are usually thrown up soon after eating—especially if too much food, or food of a stimulating nature have been swallowed. Those who, from a milder degree of the disease, or idiosyncrasy of stomach, do not vomit, are oppressed, during the gastric digestion, with a sense of load at the stomach; nausea, acid, corrosive or fetid eructations, rumination, and exasperation of the usual pain. There are some patients who only experience eructations, inquietude, malaise, and mental perturbation. The pulse rises a little, and the skin warms, during gastric digestion, but sink to their usual level when the digestive process is finished. For a considerable time the bowels are as costive, as though a scirrhus of the pylorus existed; but ultimately, in the majority of cases, there is diarrhœa, with colic, tenesmus, and stools mixed with blood—a proof of the extension of the disease. Then the breath and even the perspiration exhale an odour manifestly stercoraceous.

These sufferings, even when not very severe, are badly borne by the sick, who become dejected, impatient, taciturn, discontented, and not disposed to enter into the details of their ailings. They have an air of suffering in their countenance; the conjunctiva, lips, and cheeks, being of a deep red colour, verging towards that of tincture of logwood, as are also the tongue and whole interior of the mouth, excepting along the centre of the former, where a thin mucous list may be seen. In a few subjects M. Broussais has observed, the tongue very much loaded, the breath offensive, and a bitter taste in the mouth—but these are exceptions, and the diagnosis must be drawn from the *tout-ensemble* of the symptoms, not from any one class exclusively.

As soon as chronic gastritis is completely established, the cellular and adipose membrane becomes nearly absorbed, with but little diminution of the muscles; when these last are much extenuated, the disease is without hope. At all times, however, the skin is drawn tight over the muscles, sinking in their interstices, so that it cannot be pinched up but with difficulty, even in those places where it is usually very relaxed. In no other species of marasmus has M. Broussais seen this degree of adhesion so strongly marked. This character of the skin, together with its colour, being a brown, inclining to yellow, offer two of the most constant diagnostic signs of chronic gastritis.

The pulmonary system suffers very little in this species of the disease, with the exception of a slight stomach-cough occasionally. Nor is the circulation so much influenced, at the beginning, as to evince any appreciable febrile movement. When the disease has made progress, then the pulse becomes hard and frequent; the skin, at the same time, being hot, and dry to the touch. There is always an evening exacerbation, with agitation and restlessness. If this train continues unchecked, prostration of strength soon ensues, and the gastritis, in fact, passes into the acute form. If, however, the febrile movement is only marked by frequency of pulse, without heat of skin—or if the patient only experiences a few hours of heat towards the evening, or during digestion, the malady may continue chronic. In all cases, if long protracted, the febrile symptoms subside—and the evening exacerbation ceases to be sensible. Then the skin becomes cold, and the colour before described, with perceptible wasting of the body. When diarrhœa is added, the cessation of pyrexial phenomena is still more sudden and complete.

III. *Phlogosis of the Mucous Membrane of the Intestines, or Dysentery.* M. Broussais observes that, we rarely find, in the bodies of those patients who have died with diarrhœa, any signs of phlogosis of the internal surface of the small intestines. Such inflammation is usually found in connexion with gastritis—indeed, where the mucous membrane of the small intestines is found inflamed at all, there is generally inflammation throughout the whole canal, from the cardiac orifice of the stomach to the anus. M. B. in this section, speaks only of inflammation as affecting the colon, which he divides into acute and chronic, though he seems to feel, that the shades so blend into one another occasionally, as not to be distinguished but in well marked cases.

A. *Acute Species.* In this case there are few promonitory symptoms, especially if the disease be very acute. In its highest degree, it is, according to M. Broussais, DYSENTERY. In our author's symtomatology, there are suspicious passages —as, for instance, his mentioning the discharge, at first, of *fæcal* stools, and afterwards, of *bilious* ones. Such occurrences we have not observed in one case in fifty, and we have seen more than two thousand cases of dysentery. We can allow, however for these inaccuracies—or perhaps M. Broussais' patients were differently situated from those of our countrymen here, or in the colonies.

The phlogosis of the colon, M. Broussais has seen terminate in grangrene, in the course of a few days, without any other mark of fever than a certain precipitation in the pulse, without any heat of skin. If the patient be vigorous, plethoric, or irritable, the febrile heat is strongly developed, after rigors more or less apparent from the beginning. Then the dysentery is acute and febrile, like the acute gastritis before described. The symptoms of acute dysentery need not be detailed —nor does our author enter into the consideration of complications of this disease with continued fever.

B. *Chronic Colonitis.* 1mo Chronic *secondary* diarrhœas are not uncommon symptoms, sometimes a sequel of acute dysentery, and too often, in such cases, the consequence of maltreatment. Most of these secondary bowel complaints have, at one period or other, symptoms in common with dysentery, as bloody stools, tenesmus, and some febrile movements in the system. 2ndo *Primitive* chronic diarrhœa. A man, apparently well, becomes affected with bowel complaint, which sets in without fever or pain, and lasts a longer or shorter time, exhausting his strength and flesh, yet without causing any considerable disorder in the harmony of the other functions. This diarrhœa is, like the preceding, the effect of phlogosis in the mucous membrane of the large intestines. It is the lowest grade of chronicity in the disease under consideration, and one which it is important to mark, as being allied with grades where phlogosis is unequivocal. It corresponds with the chronic gastritis already described.

M. Broussais saw a number of people in Italy attacked with diarrhœa, without any other appreciable cause than the influence of climate, and food of an irritating nature, or of difficult digestion. It was accompanied by no other inconvenience than slight colicky pains preceeding each dejection. These people continued to attend to their usual avocations, for some weeks, till the debility and the harrassing frequency of stools, compelled them to give up. As long as the patient continued his usual occupation and regimen, so long the disease continued;—and in such cases it was often protracted for six months. But by degrees, it exhaused the patient. If they were of an irritable constitution—if they had constringing pains of the abdomen, with a contracted, quick pulse, they usually fell into marasmus. Or if they were of a more relaxed and leucophlegmatic habit, (which is often the case in these people) they became dropsical, and died with, or without, coma, according as effusion did, or did not, take place within the coverings or cavities of the brain.

" In fine," says our author, " when the irritating causes exalt all at once, the action of the gastro-intestinal mucous membranes so far that pain shall suspend their functions and disturb the harmony of their movements—that is to say, when the gastric or intestinal irritation shall become suddenly so powerful as to cause local pain, vomiting, or diarrhœa, and fever—we have *acute inflammation* of the mucous membranes. When, on the other hand, these irritating causes exist for some time, without producing more than such a moderate excitement as shall only suspend the gastric functions for a short time, and feebly call forth the play of the sympathies, without greatly disturbing the general harmonies of the system—then we have *chronic phlogosis* of the same structure." *Tom.* II. *p.* 228.

IV. *Organic Changes.* Every phlogosis of the mucous membrane of the digestive organs, which proves fatal, during its acute stage or state; presents, *post mortem*, the tissue thickened, dense, reddened in different degrees, and sometimes exhibiting the characters of ecchymosis, or even gangrene. The membrane is sometimes found eroded, or, as it were, gnawed in small isolated spots;—and, finally, covered or not, with an exudation of various consistence and character. The change of *colour* from rose red to violet, or even black, does not necessarily prove disorganization of *structure*.

' An attentive observation has convinced me, that patients have often died from the sole effects of *pain*, in early stages, and before the inflamed texture (trame enflammée) was broken, or sensibly altered in its composition. This is the fate of those unfortunates to whom cordials have been given when overwhelmed with debility resulting from the nervous irritation and pain in such sensible structures. I have often resuscitated, with lemonade, men who were without pulse, delirious, and almost in the agonies of death. And those who have died in this state, frequently shewed nothing more on dissection, than discoloration, without erosion or fœtor, of the mucous membrane."

Here M Broussais very properly observes that various authentic histories prove how long the mucous membranes, both of the digestive and respiratory organs, will resist disorganization, when foreign bodies are lodged in contact with them, and keeping up great irritation, and disorder of the whole system. Among a number of examples of this kind, related by M. Dumeril, we shall only select the case of a youth of twelve years of age, who, up to that period, had enjoyed perfect health. At this time he began to evidently emaciate, with frequent and dry cough, evening fever, morning sweats, and other symptoms indicative of consumption, which every day increased in severity. The patient seemed at his last goal, when one day he passed by stool, the shell of a nut which he had swallowed twelve or fifteen months before. From that instant the symptoms began to abate, and the patient was soon restored to perfect health. This, and other cases of a similar nature, may lead us to hope for a cure, even in long continued gastritis and enteritis. The above case may give some idea of the endless train of symptoms produced by irritating and morbid secretions passing along the sensible membrane of the bowels from day to day, and keeping up a deranged state of the whole constitution. It elucidates the effects of mild eccoprotic and alterative medicines, steadily persevered in, till the abdominal organs become sound and free in function, and the secretions of a mild and healthy nature.

Our author here supposes that people may oject, by observing that patients will often complain of no pain in those parts that are phlogosed—not even when they are a prey to the most terrible anxiety, fever, convulsions, and delirium. But we would answer, that he must be a very bad physiologist as well as pathologist, who would expect that irritation or even breach of substance of an internal organ or tissue shall always exhibit the common feelings or sensations of an organ of sense, as the skin for example. No; these parts have their own organic sensibility, which may produce infinite disorder in the system, before the common sensibility, or feeling of pain be developed. Although pain, therefore, be a strong proof of disorder in an interior part, the absence of it is no proof to the contrary. We must always take various phenomena into consideration.

Those patients who had fallen a little later, after passing from a state of excitement to one of exhaustion, with symptoms of low, putrid fever, especially fœtor of the breath, have often presented, on dissection, the mucous membrane black, easily lacerable, and exhaling a gangrenous odour. This was by no means always the case, even when symptoms led to the expectation of it. Erosions only take place partially, and in the portions most phlogosed. Apparently they are incipient ulcerations.

Fatal *chronic* gastrites have presented to our author disease of the mucous membrane differing somewhat from that produced by dysentery. In Italy he found the same morbid appearances after chronic, as after acute, gastritis—namely, discolouration, thickening, and sometimes erosions. He never saw unequivocal ulceration. The redness was not so deep in chronic as in acute disease—nor did the violet or black parts exhale the gangrenous odour. The thickening of the membrane was uniform. In almost all the dissections of chronic cases the digestive tube was found contracted, so as to contain scarce any excrementitious matters, its parietes being almost every where in contact. In very protracted cases the whole of the intestines were found wasted and shrunk, so as to occupy but a very small space indeed. Larry makes the same remark; and Tartra found, in a patient who had been three months ill with the gastritis, the intestines so reduced that they could be, as it were, held in his hand. The intestinal calibre did not exceed that of a quill, and in many places was almost completely obliterated. We have seen a few remarkable instances of this kind ourselves; but the peritoneal covering was also implicated in the disease, and the flexures of the intestines all glued together.

M. Broussais remarks that, notwithstanding what has been said, he sometimes found that considerable irritation had continued for two or three months in the mucous membrane, without leaving a single trace of its existence, *post mortem;* death having, apparently, taken place from that excessive debility resulting from the interruption of the digestive process by pain, together with the sympathetic disorder of various other functions of the system. When, however, chronic phlogosis of the mucous membrane was protracted to a much greater length of time, as for some years, which is not unfrequently the case, then there was a different result. Disorganization was evident, and generally consisted in a thickening of the stomach, for several inches in extent, involving the three coats in one confused and morbid structure.

Chronic dysentery always leaves, *post mortem*, a greater or less degree of thickening in the mucous membrane, and generally a number of ulcerations, resembling those of syphilis; the mucous membrane in those places being entirely destroyed, and the muscular coat of the intestine always forming the floor of the ulcer.

A minute examination of such of these ulcers as were in an incipient stage, convinced M. Broussais that they took their origins in the crypts or glandules that furnish the mucous secretions. Around them the membrane was thicker than elsewhere, and of a blackish colour. These ulcerations were most numerous where the fæces are apt to lodge, as the cœcum and lower half of the colon. In some instances, M. Broussais has observed these ulcerations in the lower portion of the ileum, but never elsewhere. M. Broussais concludes, (and there can be little doubt of the justness of his conclusion,) that when feculent matters become fetid and putrid, whether from protracted remora, or imperfect digestion, they prove a source of irritation, and ultimately of phlogosis in that part of the mucous membrane where they happen most to lodge. It is also evident that, when irritation is present in the mucous membrane of the bowels, a greater quantity than usual of mucous is secreted, and this is a characteristic of the class of complaints under consideration. When ulceration of the mucous membrane has taken place, M. Broussais considers the disease as incurable, or nearly so. They do not exist in the stomach or small intestines. There is no sign by which we can ascertain their existence in the large intestines during life.

V. Before entering on M. Broussais' methodus medendi, we shall here introduce an outline of Dr. Abercrombie's opinions on affections of this class of mucous membranes. Viewing the internal coat of the intestinal canal in the double light of a secreting membrane and an absorbing surface, he justly considers that disordered function of secretion must derange the process of absorption, and this latter disorder will have, of course, a great and deleterious effect on the whole constitution, by cutting off the supply of the system.

The morbid conditions of this membrane he refers to acute or chronic inflammation, and their sequelæ, thickening, erosion, and ulceration. As the incipient movements of inflammation here are seldom observed, diarrhœa is generally the first symptom that comes under our cognizance in practice, accompanied by pain in the abdomen, more or less diffused, and usually increased by pressure, but without that acute sensibility attendant on inflammations of the peritonæal covering.

" It differs from peritonæal inflammation also, in being less affected by inspiration and by motion, so that the patient can often bear the erect posture with little inconvenience. The pain, in general, varies very much in degree, leaving long intervals of ease, and then occurring in paroxysms of violent tormina; these are generally followed by discharge from the bowels, but may take place without any discharge following them. In some cases, however, the pain is more permanent, so as more nearly to resemble the pain of enteritis. In general, there is frequency of pulse, with thirst, febrile oppression, and a brownish fur on the tongue; but, in some cases the pulse is little above the natural standard through the whole course of the disease. There is frequently vomiting, but not urgent, and sometimes a peculiar irritability of the stomach, so that any thing taken into it excites a burning uneasiness, and this is usually followed by an irritation of the bowels, with a feeling as if the article which was swallowed almost immediately passed through them.

" The evacuations from the bowels vary very much both in appearance and frequency. In some cases they are slimy and in small quantity; in others, they are copious; sometimes they are watery and dark coloured; sometimes whitish; frequently yellow and feculent, as in a common diarrhœa; and sometimes articles of food or drink pass through nearly unchanged. They are in some cases extremely frequent, the patient being called to stool every ten or fifteen minutes; in others, the disease may be going on rapidly to a fatal termination, while the bowels are not moved above three or four times in a day. No diagnosis of the disease, therefore, can be founded either on the frequency of the evacuations, or on the appearance of the matters evacuated. In some cases there is tension of the abdomen, but in others this is wanting; and it may appear and disappear several times in the course of the same case." *Ed. Jour. p.* 322.

In this way it may go on for one or two weeks, or extend to five or six—or pass into a chronic state, forming a disease analogous to what is termed lientery, wearing the patient out at the end of several months.

Its fatal terminations, in the acute state, are according to our author, a peculiar rapid exhaustion—or conversion into peritonitis or enteritis, in which case, the diarrhœa usually ceases a few days before death. Dr. A. lays down little satisfactory as to diagnosis or etiology. We shall here introduce an extract relative to the appearances on dissection, by which it will be seen that Dr. Abercrombie has been anticipated in all essential points, by the French pathologist. The corroboration afforded by Dr. A. however, is satisfactory.

> "The appearances, on dissection, vary considerably, according to the period of the disease at which the fatal event takes place. When this happens at an early period, we find the mucous membrane covered with irregular patches of inflammation, which are, in general, sensibly elevated above the level of the sound parts. They vary exceedingly in extent in different cases, in some extending over a great part of the canal; in others, being confined to a very small portion of it, frequently about the lower end of the ileum, or the head of the colon. They vary also in size, consisting, most commonly, of patches one or two inches in diameter, with sound portions interposed betwixt them, above which they are sensibly elevated. In other cases, but I think less frequently, a considerable extent of the canal is of a continued uniform redness.
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> "The inflamed portions are in some cases covered with a brownish tenacious mucus; in others, by coagulable lymph, and frequently the surface of them is studded with minute vesicles, which at a more advanced period, seem to pass into very small ulcers. In other cases small round portions of the membrane are observed of a grey colour and soft pultaceous appearance, are found to be easily separated, and to leave ulcers. In the cases which have gone on to a more advanced period, we find ulcers of various extent and appearance. In some examples, they are of the same colour with the surrounding parts, and merely appear as if a portion of the membrane had been dissected out. In other cases they are more decidedly ulcers, covered at the bottom with yellowish sloughs, often with elevated edges, and surrounded by a ring of inflammation, and sometimes penetrating to such a depth as comepletely to perforate the intestine. These different appearances seem to be different stages of the same disease; for we may sometimes observe one of those penetrating ulcers, surrounded by a larger circle of abrasion, without evident ulceration, and this by another ring of inflammation: this outer inflamed portion being probably covered by the very minute ulcers or small vesicles formerly mentioned. The appearances which I have now described seem to be the most common; but cases occur in which an extensive portion of the mucous membrane is black and gangrenous, and sometimes an extensive portion has been found to be separated, so as to expose the muscular coat, or even the peritonæal. Cases are also described which have recovered, after a portion of the internal coat had been thrown off in this manner, in one continued cylinder of great extent. The external surface of the intestine is sometimes healthy; in other cases there are spots of obscure redness corresponding to the inflamed portions of the mu-

cous membrane. The cases which terminate by peritonæal inflammation or enteritis, have the appearances usual in these affections, and in the cases in which the ulcers penetrate the intestine, effusion of coagulable lymph, lividity, or grangrene, to a small extent, may often be observed on the outer surface, surrounding the perforations." 324.

Dr. A. thinks that acute inflammation of the abdominal mucous membranes is a frequent disease of infants about the age of six or eight months, being with difficulty distinguished from the common bowel complaints of children, resulting from the constitutional irritation of dentition. There is pyrexia, with fretfulness and screaming, bad sleep, frequently vomiting, pressure on the abdomen, in many cases, giving pain. The disease often assumes the character of what is termed " the infantile remittent fever." The bowels are generally, not always, loose, the evacuations being preceded by much restlessness and apparent uneasines, and being very various in colour, odour, consistence, &c. Sometimes they consist of a reddish brown mucus, sometimes of a pale clay-coloured matter, sometimes of a dark watery fluid, and at others, not varying materially from a healthy state. The disease is usually mistaken for a common diarrhœa, until strong constitutional symptoms, as great febrile oppression, dry crusted tongue, thirst, vomiting, or a rapid exhaustion of the vital powers, excite the attention and anxiety of parent and practitioner. *Dissection*, in these cases, usually shews irregular patches of inflammation in various parts of the inner surface of the intestines, especially the ileum, often covered with minute vesicles or ulcerations. In cases terminating with coma, effusion in the brain is found, often preceded by a remarkable paucity of urine.

Of the *chronic* form of mucous inflammation, in general, Dr. Abercrombie does not say much. He thinks it may be a sequela of the *acute* disease, or an idiophatic affection. When it has continued for some time, we find the patient withered and emaciated, generally with diarrhœa, either constant or alternating with a constipated state of bowels, the appetite being variable and capricious, sometimes good or even voracious. The food often produces uneasiness until it is evacuated imperfectly digested.

If by opiates or astringents the diarrhœa be restrained, the gastric uneasiness is generally much increased, and vomiting is sometimes excited. In other cases, vomiting regularly alternates with diarrhœa, the remedies that relieve the one aggravating the other. The abdominal pain, though generally existing, is various in character, being sometimes in the shape of tormina preceding the evacuations—in others, more permanent and increased by pressure. The matters evacuated are very various—sometimes fluid and feculent—frequently white—and sometimes a mixture of half-digested articles, with recent bile, or brownish mucus, the production of the diseased surface. "In some cases there are discharges of venous blood, which may either appear in the form of coagula, or as a dark pitchy matter, giving a dark colour to the whole of the matter discharged." The *autopsial* observations of our author on the chronic form of the disease differ, in some respects, from those of M. Broussais, and therefore, we shall introduce a quotation from the former in this place.

> "The apearances on dissection shew the disease in various stages. In some cases, even after the symptoms have existed for a considerable time, we still find it in the form of irregular patches of fungous appearance, and a dark red colour, slightly elevated above the healthy parts. In others, we find distinct small ulcers, with round elevated edges, and sometimes more extensive irregular ulceration, with ragged edges. Frequently the coats of the intestines are thickened at the ulcerated parts, sometimes to such a degree as considerably to diminish the area of the intestine. In such cases, the ordinary symptoms of the disease are apt to alternate with attacks of obstinate costiveness, and they are frequently fatal by ileus. In some cases, instead of ulceration, the inner surface of the diseased parts is studded with numerous tubercles, of various sizes, and sometimes an extensive tract of intestine is found covered with smooth cicatrices of ulcers, which have healed. In some of these cases, the symptoms have continued, and gone on to their fatal termination in the usual manner. In others, this appearance is found after the symptoms have ceased, and the patient has died of some other disease. Cases have also occurred in which the patients died of emaciation, after the symptoms had ceased, apparently from these cicatrices being so extensive as to interfere with the process of absorption." 328.

Dr. Aberbcromie justly observes, that there is great reason to believe, that the class of disorders under consideration exists in a degree short of actual inflammation, but sufficient to produce a host of those anomalous affections of the *chylopoietic organs* which, of late, have forced themselves on the attention of various physicians and surgeons. Indeed we are firmly persuaded that, to irritation of the mucous membrane of the stomach and bowels, together with the various sympathetic disorders of other organs, the consequence of this irritation, are owing nine tenths of human afflictions—and that the more this subject is studied, the more power will we have over diseases which have generally proved obstinate or intractable. It was from this conviction that we brought forward the present article, and hope it will not fail to excite to farther investigation.

VI. *Treatment.* M. Broussais thinks he may hazard one fundamental rule, in the treatment, which is without exceptions—namely, that when the internal surface of the alimentary canal is phlogosed—that is, when its sensibility and temperature are exalted—its texture tumefied, and its nerves in pain, it cannot bear, with impunity, the application of irritating substances—on the contrary, our prime curative indication is to bring into contact with it, matters the reverse of stimulant. The upper and lower portions of this canal, that is, the stomach and intestines, are somewhat differently acted on by the same substances, and therefore require to be considered separately.

A. *Treatment of Gastritis in general.* M. Broussais thinks that this is simple and easy. This inflammation requires 1mo TIME to subside before aliments are introduced into the stomach—2ndo medicines to facilitate the favourable termination of the disease. The *first* precept or rule is to be most rigidly observed. Meat, the farinaceæ, and fruit ought to be prohibited in gastritis. The best drink is a very dilute solution of gum tragacanth, which is less irritating than gum arabic, the extractive or colouring matter of the latter being somewhat stimulant. While we forbid the use of aliment, or drink of an alimentary nature, so that the stomach may be at rest till the phlogosis is resolved, this resolution may be accelerated by blood-letting, sedative, topical, and other external applications. *General* blood-letting, our author thinks, will seldom be of service—excepting in very acute forms of the disease, when the strength of the pulse, the dyspnœa, or the sympathetic cough, unequivocally demand that measure. Local bleeding, especially by leeches placed over the epigastrium, is of more certain benefit. Yet even this is only an auxiliary, and gives but temporary relief if unaided by internal emollients and sedatives. Of the internal sedatives the vegetable mucilages and acids are by far the best. The *former* must be simple, pure, and free from extractive or aroma, as linseed, althea, quince seeds, gum tragacanth, and others that are perfectly insipid. The decoctions, infusions, or solutions of these substances should be made, if possible, with distilled water, and be very dilute, otherwise they are apt to soon disgust the patient.

After the mucilaginous substances, the vegetable acids stand next in order of utility—but they must not be employed indiscriminately. The acetic acid does more harm than good. The lemon, of all fruits, furnishes the best acid for the drink of a patient labouring under gastric inflammation. After citric comes the pure tartaric acid; but it must be given extremely diluted. Orange juice diluted in water is beneficial, but the patient generally soon tires of it. The gooseberry and raspberry are better. The acid of the mulberry is too penetrating, and if employed, must be very largely diluted. The mineral acids are poisons in these cases. The vegetable acids above mentioned, are only to be employed so as to give a light and agreeable acidulous taste to the water or ptisans used for drink. Saccharine vegetable acids too are to be very sparingly given, as the sugar is slightly stimulant in itself, and, if not digested, runs into the spirituous fermentation. M. Broussais has not employed the carbonic acid, though he thinks it might be useful. Blisters to the region of the stomach do as much harm by their general excitement of the system, as they do good by their local revulsion. He thinks the same observation is applicable to all the other vesicatories or rubefacients. If then, irritation of the skin generally propagates a sympathetic irritation to the internal coat of the stomach, we might expect that such applications to the surface as produced pleasing sensations there, would soothe the gastric affection. Experience, he says, corroborates this. The patient naturally craves for pure cool air, throws his arms out of the clothes, and bares the chest and epigastrium. He has found it extremely useful in this complaint, to keep the surface over the stomach wet with cold, or at most, tepid evaporating lotions, by means of cloths. The application of ice, if the weather be hot, is serviceable, in many cases. "Let not," says our author, "practitioners despise these means last enumerated, as useless or superfluous. I have derived from them the greatest advantage. I have seen patients freed from pain and gastric malaise, almost instantaneously by the application of flannels, wrung out of emollient decoctions, to the epigastric region. The soothing of pain and the increase of perspiration generally resulted from this measure, and were of incalculable benefit." These observations apply to gastric inflammation in general; the different periods and varieties of the disease require corresponding modifications.

And here we solicit the patient and attentive consideration of our brethren. However we may undervalue the inert practice of our French cotemporaries, in acute diseases generally, we are convinced that their treatment is singularly judicious and appropriate in the peculiar class of the phlegmasiæ now under investigation—not only because the phlegmasiæ do not bear so well the depletory treatment of this country, as far as regards blood-letting; but, secondly, because the system of purgation here is particularly miscalculated to allay irritation and inflammation of the inner surface of the stomach and bowels. In fact, we have not been in the habit of sufficiently attending to the great difference of symptoms and treatment, dependant on the structure in which the inflammation is seated. Let us then divest ourselves of all foolish prejudice, and listen to the dictates of reason and experience.

B. *Treatment of Acute Gastritis.* The *prevention* of this disease may be easily gathered from a contemplation of the causes. When gastritis is unequivocally manifested by the symptoms already enumerated, we must not dread debility by cutting off every species of food, and every kind of drink but the bland fluids alluded to, from even drunkards and gluttons. During the first days, then, of acute gastritis, nothing should be permitted internally, but small quantities, at a time, of dilute lemonade, or the other fluids above indicated. This absolute prohibition should continue till the febrile movements and sympathetic nervous disturbance cease. Then, and not till then, should we venture on even the farinaceous decoctions, or the infusions of the saccharine fruits, as apple or pear tea, &c. Nor till this period should veal or chicken broth be allowed. Next, in order of aliment, but not for some days after the farinaceous regimen, panada, bouilli, soup, may be cautiously ventured on. Solid aliments should be abstained from till every symptom is gone, and repeated proofs are offered of the return of the digestive powers. Then they should be of the lightest and tenderest kind, and small in quantity. Here M. Broussais introduces an instructive case in illustration, which we shall insert, but considerably condensed in language.

" *Case* XXVIII. M———, 48 years of age, stout and muscular, had lived, during the last four years, an irregular life, in respect to food and drink, accompanied by some gastric derangements, which were removed from time to time, by gentle evacuations, diluents, and tonics. In October 1807, he committed a great debauch in eating and drinking, and was seized, after retiring to bed, with sudden vomiting and purging. Every kind of drink which he swallowed was instantly rejected, and the stools became black and fetid, but passed without any pain. The pulse was unaffected. This cholera continued four hours. When over, the debility seemed extreme. Antispasmodics, tonics, &c. But soon the pulse rose in force and frequency—the skin became hot—the mouth dry—the tongue coated. In short, he soon presented the characters of low or adynamic fever, and his physician prescribed wine and water. The pulse keeping up, no stronger stimulants than the above were exhibited, and in three or four days the febrile symptoms disappeared. His physician now permitted a little light food and two or three glasses of claret, to recruit his strength while some rhubarb and manna were given to procure some stools, constipation having succeeded to cholera. Stools were procured, and two days passed thus, in supposed convalescence. But on the third day, the tenth from the attack, high fever, red eyes, loquacious delirium, great restlessness, and surprising change of countenance took place. The idea of typhoid fever now took possession of the physician's mind, and camphorated decoction of cinchono, with stimulant antispasmodics were prescribed. These being ineffectual, recourse was had to sinapisms to the legs. The disease increased, and next day (11th) M. Broussais was called to the patient, who presented the following symptoms:—face distorted—eyes haggard, with the conjunctiva of a deep red colour—countenance that of a person insane, or in the last stage of putrid fever—tongue clean—skin dry and hot—pulse hard, frequent, and rather strong—constipated bowels—all the excretions checked—no gastric or abdominal pain on pressure. When asked how he did, he replied 'very well.' All his expressions were incongruous. He picked the bed-clothes—his muscular powers were extremely depressed—his voice and limbs trembled. The history of the complaint and the phenomena convinced M. Broussais that the commotion of the nervous system was owing to phlogosis of the muccus membrane of the stomach, and prescribed gum tragacanth solution, sweetened with some lemon syrup, to the exclusion of every other kind of ingesta. In the evening the pulse was softer—he had made water thrice abundantly—restlessness was less—and during the night, some moisture appeared on the skin. *12th day.* The symptoms continued to ameliorate; and on the 13th he he had a keen appetite. A little vermicelli. *14th day.* Another vermicelli in the morning. In the course of the day, the fever and delirium rose again. A glyster brought away five stools, the first solid, the others black and fetid. On the *15th day*, he took a little farinaceous aliment, followed by much malaise and debility. On the the 16th, in consequence of dyspeptic appearances of the mouth and great weakness, some light tonics were ventured on. Barley ptisan with syrup of orange peel was given. Quickly there came on great heat of stomach, quick pulse, anxiety, colic, and other disagreeable symptoms. M. Broussais was again summoned, and changed the foregoing drink for lemonade. Great amelioration of symptoms—in a few hours tranquillity was restored; and next day the appetite returned. Two days after this, some rice was imprudently given to the patient, followed by a renewed train of fever, delirium, &c. It was now evident to the most ignorant and prejudiced byestander, that food always reproduced the bad symptoms, and that the stomach was incapable of digesting any thing beyond lemonade, to which the patient was rigidly confined for the next two days. Tranquillity was now secured, and on the 22d day from the commencement of the attack, there only remained debility, which was removed in a reasonable time, by a gradual and careful return to nourishing food."

To M. Broussais, who was long accustomed to see gastric irritation give way, with very little resistance, to diluting drinks, and the most rigorous regimen, it appeared incontestible that the foregoing case would have terminated favourably on the fourth day, had not the febrile movements, succeeding the cholera, been treated as a putrid fever. He attributes the relapse, in the first instance, to the vermicelli, the claret, and the purgative. The subsequent exasperations of the complaint by errors of diet are too remarkable to require notice here. M. Broussais observes, in this place, that delirium is one of the worst symptoms in acute gastritis, as he has seen but few recoveries where it had taken place.

The next case (being the 31st of our author's) which we shall give some account of, was one where acute gastritis simulated malignant fever.

Case. Sauriot, 28 years of age, robust and well made, fell ill on the 23d July, 1807, at Udina, during a season of great heat. M. Broussais did not see him till the 28th, the 5th day of the disease. He was then cadaverously pale, and extremely debilitated. He lay on his bed motionless—his eyes closed, and his limbs thrown apart. This state of depression was occasionally interrupted by feeble groans, and contortions of the body, with change of posture when spoken to. He could not pronounce a word. When he opened his eyes, they appeared as though he was moribund. He indicated by signs and gestures that the epigastrium and upper part of the belly were the seat of his sufferings. He refused to take any thing—but when prevailed upon to swallow any liquid, he immediately vomited. Constipation was obstinate. His limbs were cold—the pulse small and slow—the face of a leaden colour—no fœtor of the excretions. Although no history of this case could be traced, yet the season of the year, and the circumstance of many others being ill at the time, convinced M. Broussais that the disease was not putrid fever, but irritation and inflammation of the mucous membrane of the stomach. His determination therefore was soon taken. He prescribed no other medicine than mucilaginous drink, acidulated with citric acid, and "*Lait de Poule*," for aliment. This plan was continued for six days, during which all the symptoms were gradually ameliorated, but the bowels had not acted. On this account hydromel was substituted, for one day, instead of the mucilaginous drink, and several stools were procured.

From this time all went well, and he was discharged to duty in thirty days from his entrance into hospital.

The following case of acute gastritis preceded for a long time, by irritation in the stomach, holds forth important matter for reflection and preventive measures. We shall compress the long original details as much as possible.

Case. Mons. P———, 39 years of age; robust and muscular, complained, during the summer heats of 1806, that his appetite was gone—his digestion slow, and his bowels confined. He was grown pallid, and wasted a little. M. Broussais advised him to drink his wine more diluted—to lessen the quantity of his food—and to leave off coffee and liquors. The latter part of the advice was not followed. When the cool weather set in, finding his stomach complaint somewhat relieved, he adopted all his former habits. He now became so costive that he rarely had a stool without the assistance of enemata. He felt as though a bar crossed in the line of the transverse arch of the colon, with an obstruction to swallowing from something in the chest. In this way he continued about five months, when his appetite totally failed for a few days, but by abstinence and diluents returned a little. On the 25th January 1807, having eaten some teal, he felt greatly incommoded. At this time chronic *irritation* seemed to have assumed the more formidable character of inflammation, denoted by the following symptoms:—a most disagreeable sense of weight at the epigastrium, with the transverse bar above alluded to—general malaise—irregular shiverings and flushings which, for two days preceding M. Broussais' attendance, led the byestanders to believe, that Mons. P. had an ague. When our author saw the patient, three days from the eating of the wild fowl, his cheeks were red—countenance desponding—tongue dry, and a little white in the middle—breath somewhat offensive—every thing he swallowed lay like a stone in his stomach—urine very scanty—pulse hard, vibrating, and rather frequent. He was put on lemonade, and ordered to take every half hour a spoonful of a mixture of oil of almonds and lemon syrup. He passed the night much easier than the preceding ones. Next day the symptoms were somewhat mitigated; and fomentations were ordered to the epigastrium, with an oily enema. In the evening the pulse fell— he had no shiverings—passed a good stool, and made abundance of urine.

From this time the recovery was progressive, but slow, and he was not able to return to his regular diet till 34 days from the supervention of the acute form of the disease.

This case, M. Broussais observes, is important, inasmuch as it shews that gastritis, long preceded by irritation in the stomach, may be checked in a few days by diluents and demulcents alone. We shall now introduce a case of chronic gastritis.

C. *Ch. Gastritis.* Danton, 20 years of age, while marching as a conscript to join his corps at Redina, was forced to enter the hospital of Brescia, on account of obstinate and severe pains in his stomach, about the middle of November 1809. He was not affected with vomiting; but he lost his appetite, and felt very ill after eating any thing. He remained eleven days in the hospital, without experiencing any relief. He then joined his corps, where he continued in the same sufferings, with such increase of emaciation and debility, as compelled him to enter the hospital of Redina, on the 26th of December, 42 days after the commencement of the disease. M. Broussais found him pallid, dejected, incapable of any exertion, without appetite, and costive—in short, in an incipient state of marasmus. He complained of obtuse and deep-seated pain in the epigastrium, accompanied with constant malaise. The region of the stomach was somewhat full, and when pressed on occasioned pain. The pulse was small and hard, and rather frequent—skin dry to the touch, and hot. Believing al these symptoms to be dependent on gastric irritation, our author considered that only mucilaginous emollient aliment and medicine were necessary to deprive the gastric membrane of its excess of sensibility: For two days, therefore, the patient was confined to mucilaginous and acidulated drink and weak broth—then some bouilli for diet. He did well. During couvalescence some antispasmodic and anodyne medicine was given him, for the purpose of procuring better sleep. A relapse immediately occurred, and he was forced to adopt the same rigid system as before. The convalescence was tedious, but ultimately health was completely restored.

Here M. Broussais observes that, in the treatment of chronic gastritis, we are not so much to regard the length of time which the disease has existed, as the degree of debility or marasmus to which it has reduced the patient. So long as the muscles are not greatly extenuated, marasmus is not to be considered as established; and although the patient appears excessively debilitated, we must not be in haste to exhibit tonic and strengthening medicines or food. Strength is not annihilated, but temporarily subdued by the gastric irritation and pain. When to the absence of extenuation is added a knowledge that the disease was slight at first, and maintained by improper stimulants, we have every reason to hope for recovery by rigid abstinence and aqueous emollients. It is surprising how rapid the change, sometimes in such cases, from sickness to health, by the simple means above mentioned. "*La promptitude de l'amelioration est plutot due a l'absence de toute irritation, qu'a une vertu specifique des medicamens.*" We consider an abridgement of the following case not unworthy of record here.

Case of Chronic gastritis. Meurat, a gunner, 32 years of age, was treated in one of the hospitals of the Frioul, in May, 1807, for an intermittent fever, accompanied with vomiting during the paroxisms. He was given emetics, and afterwards the bark, which suppressed the fever, and he was soon discharged to duty apparently well, except that his stomach was rather irritable. On the 15th day after his discharge, he was suddenly seized with vomiting of his food, on account of which he drank a little more wine than usual, to strengthen his stomach. In this state of gastric irritation he continued fifty days. But the vomiting becoming more violent, and accompanied with very severe pains in the epigastric region, lassitude, debility, and general malaise, he was sent to the hospital of Udina, on the 14th of July, 1807, on the 50th day of the vomiting, and about two months and a half after the cure of his ague. His eye was now sunk—his complexion that of lead, with a yellowish tinge—adipose membrane entirely absorbed—muscles not extremely extenuated—the whole surface cold as a corpse—pulse scarcely perceptible—inability to sit up—constant jactitation—deep and plaintive sighings—throws the clothes off his chest, and his arms out of bed—nearly incapable of speaking—quite delirious. He vomited every thing that was given to him, and continued to strain violently after the stomach was empty. The epigastrium being pressed evidently increased his sufferings. He was every instant at the close-stool, but passed only mucus and blood. He was ordered to have nothing but solution of gum arabic, or sweetened linseed tea, and during the first three days, he had nothing in the shape of aliment, except a little "*lait de poule*."* On the fifth day from his entrance into the hospital, the vomiting ceased, and on that day he had but two stools. The pulse was now developed, but hard and quick—the skin warm and moist—the delirium had disappeared two days after his arrival—craved for some food—the epigastrium still very tender to the touch. Very weak broth in the morning—lait de poule at night. The epigastrium gradually lost its tenderness, and in two or three days the febrile symptoms subsided. From that time the patient began to gain flesh and strength, and in three weeks from his arrival in the hospital he was discharged to duty cured.

The above and many similar cases may convince us that the subduction of stimuli alone will go far to cure inflammatory irritation of the mucous membrane of the stomach; and it may serve to restrain a little the "*medicina perturbatrix*," or, at all events, the *poly-pharmacy* of British practice, which too often crams the stomach with medicines, without discriminating minutely between affections of the inner and outer coverings of this important organ and its appendages, though such a discrimination is of infinite importance in the treatment of the case. We seriously caution our brethren against resolutely shutting their eyes against this simple and apparently inefficacious practice of continental physicians, *in the class of complaints now under consideration*, for we are far from approving the practice generally in acute diseases of other structures in the body.

D. *Chronic Latent Gastritis.* In by far the greater number of cases, gastric irritation does not, at the beginning, create that degree of disturbance in the animal economy which may clearly indicate the nature of the disease, and therefore it passes, among the generality of observers, for what are vaguely termed *bilious* and stomach complaints. How are we, in such cases, to discover the true state of affairs? An enquiry into causes, modes of life, climate, occupation, &c. will often furnish us with strong grounds for presumption, and an attentive observation of the progress of the complaint will do the rest. Gastritis so slight as not to be recognized by the general symptoms, enumerated in their proper place, will not, M. Broussais thinks, be materially injured by the administration of an emetic. A temporary mitigation, indeed, of the symptoms generally ensues. The relief, however, is only temporary; but the subsequent recurrence of the symptoms is a valuable diagnostic. Whenever therefore we find fever, pain, and anorexia developed, after such a process, there is no longer any doubt upon the subject, and then rigid abstinence, with the bland diluents, before described, are to be immediately insisted on.

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* The yolk of an egg beat up with a little sugar and rose water.

In the summer of 1806, M. Broussais had a great number of these cases under his care. He began, in all cases, with the plan of abstinence and diluents, and the majority of the cases speedily got well. Where anorexia, bitter taste in the mouth, nausea, dryness of the skin, eructations and flatulence continued, then the patients were vomited, and the appetite immediately returned. The bowels, however, in these cases, required purgatives to clear away the saburra remaining in them. In some cases, indeed, febrile movements continued after the operation just mentioned, and in these a kind of bilious fever ran a course of four, five, or six days. Even here there was nothing else required than aperients and diluents—no bitters, no tonics were given. There was another class of patients that came under M. Broussais' care, with the following obscure symptoms:—paleness of the countenance, without any yellow tinge—some trifling appetite for breakfast, but not afterwards—after eating any thing in the evening, a sense of plenitude, as though they had over eaten—no pain, but a sense of undefined weakness, with tottering of the limbs, habitual constipation, and slow pulse. When to these patients were given bark, bitters, or other kinds of tonics, then the pulse was raised, febrile heat and other pyrexial symptoms excited, and in a short time, unequivocal gastritis was developed. M. Broussais therefore treated these cases in the same manner as chronic phlogosis of the mucous membrane of the stomach, and firmly believes that, by so doing, he saved a great number of lives.

"Those physicians," says our author, "who have profited by the lessons of M. Pinel, well know that this experienced practitioner never lost an opportunity of recommending the most mild vegetable and unirritating regimen to those hypochondriacal, melancholic, vapourish, and (supposed) obstructed patients, who, after having exhausted the whole catalogue of deobstruents, stomachics, purgatives, &c. &c. applied to him to put an end to their sufferings. Numbers have I seen cured by him, after abandoning their drugs, to live only on panada, milk, eggs, and fruit. But it is not easy to persuade the upper classes of society, especially after they have been habituated to spirituous liquors, to betake themselves to food and drink which they consider as insipid, and which for a short time, appear to be productive of debility. Yet they have to persevere, for some time, and they will find this regimen not only very pleasant, but a most effectual mode of restoring them to health." Tom. II. p. 341.

We shall pass over M. Broussais' observations on the treatment of complications of gastritis with intermittent fever, in order to come to the *methodus medendi* in phlogosis of the mucous membrane of the *intestines*.

VII. The phlogosis in question but rarely affects the lining membrane of the small intestines. When it happens, in particular cases, to pass the valve of the colon, and ascend towards the stomach, it generally proves fatal. M. Broussais therefore only treats, in this place, of phlogosis of the mucous membrane of the colon—and first of the treatment in acute colonitis, as the grand preservative from the chronic state. Although M. Broussais considers dysentery to be essentially inflammation of the inner coat of the intestines, yet he believes that, as the same miasmal causes (animal or vegetable) which produce typhus and other contagious fevers, produce dysentery, so the phlegmasiæ, in these cases, are so modified by the causes, and rendered so intense, as often to end in gangrene before art can interfere to prevent such a fatal termination. It is perfectly evident that the wide-wasting dysenteries of our colonial possessions would almost invariably destroy their victims under the French system of treatment, and therefore M. Broussais very wisely declines entering on the subject at all. He confines his observations to those simple phlogosed states of the lining membrane of the large intestines particularly, which, attacking a man in perfect health, do not acquire violence, excepting by maltreatment. From the moment that acute colonitis is declared, the patient must not only abstain from all stimulating drink, but from every kind of alimentary substance capable of leaving any fœcal residue in the bowels. Notwithstanding the atrocity of the pain, and the sense of debility with which the patient is overwhelmed in the intervals, we must not depart from the foregoing principle, so long as emaciation is absent.

The medicines which M. Broussais has found most proper to diminish the intestinal irritation, are the mucilaginous and farinaceous substances. In high states of irritation, he thinks that gum water *only* should be allowed—rice water is then too stimulant, because it requires some digestive effort. Even the simplest mucilaginous drinks are not to be indulged in too freely lest by their very bulk they should act as extraneous bodies. This plan must be persevered in, as long as the stools are frequent, and the tenesmus violent. Meanwhile, fomentations and cataplasms over the whole abdomen will be very useful. All kinds of enemata he considers as worse than useless, excepting in the very onset of the disease, where fæces may be keeping up additional irritation. In such cases their expulsion should be attempted, first by oily or mucilaginous lavements, and, if that be not sufficient, by manna or other mild purgatives.

> "Au reste, tous ces moyens évacuans ne sont indiqués qu'autant que les excrémens sont opiniatrement rétenus. Le plus souvent ils sont inutiles, parceque le premier éffet de l'irritation dyssenterique est de débarrasser l'intestin de toutes les matieres qui y sejournaient. Cela étant fait par la nature, il suffit â l'art de ne pas fournir de nouveaux excremens." *Broussais*, 356.

We agree with M. Broussais, that it is the part of the physician to prevent, as far as possible, the formation of excrementitious matters in the intestines by means of rigid abstinence; yet such is the determination of fluids to the mucous membrane of the bowels, that the most severe regimen will not prevent a great generation of morbid and acrid secretions there. On this account, oily laxatives are frequently necessary in the course of dysentery, though we condemn, as much as he can do, the daily administration of purgatives, in a disease, the principal feature of which is high irritation, if not inflammation of the lining membrane of the intestines. M. Broussais calls in the assistance of the warm bath, rubifacients, blisters, and frictions, when the dysentery appears to be the result of a violent crisis, or a metastasis of inflammation or irritation from some other tissue. "Opium, dans tous ces cas, est fort utile; mais tous ces moyens sont, pour ainsi dire impuissans, sans le concours du regime que nous avons recommande." Our author affirms, that this strict abstinence succeeded, in almost all cases, however violent, provided the patient came early under his care. We cannot say nay to this practice, never having given it a fair trial; but we have no hesitation in believing that it would, at all events, be an excellent basis, or ground-work for the treatment of dysentery in this country, and even in the colonies. We should not certainly trust to it alone, knowing as we do, the indomitable nature of the disease when suffered to advance towards alteration of structure in the intestinal lining membrane. Broussais seems to despise all means of turning the tide of the circulation towards the surface of the body by internal medicines, and also to dread opium, excepting in some particular cases. Yet we can assure him, and it is now universally known in this country to all who have had any experience in the disease, that a combination of sudorifics and anodynes, with a proper proportion of a mercurial preparation, is by far the most powerful means we possess in allaying the intestinal irritation, and determining to the skin. In this country very severe bowel complaints may be safely and effectually treated with cretaceous mixture and tincture of opium, after each liquid motion, while five or six grains of the blue pill with a quarter of a grain of opium, and three or four grains of antimonial powder, are taken twice, thrice, or oftener in the 24 hours. During this time the patient should be confined to bed, and the Broussaian regimen strictly adopted.

Treatment of Chronic Enteritis. A diarrhœa continuing after the 30th day must depend, M. Broussais thinks, on *organic* derangement of the mucous membrane of the colon. In general, however, it is kept up by improper regimen or medecines only. In all cases it is a chronic phlogosis, the treatment of which, he conceives, may be fixed by invariable rules. These rules may be easily anticipated by what has already been said. The food must be such as leaves the least feculence to pass along the intestines; and, of course, the quantity should be no more than the stomach and duodenum can digest, otherwise the remains, when mixed with bile and mucous, will undergo fermentative and other decompositions in the track of the intestines, which, with the gases evolved, create much irritation there. On this account, gentle tonics are serviceable, by strengthening the tone of the stomach; but care must be taken that their action does not go beyond the stomach, otherwise they are likely to aggravate the complaint. The remains of animal food, our author thinks, are much more injurious than those of vegetable; but of vegetables there must be much selection—the farinaceæ alone are admissible in chronic bowel complaints. Barley, wheat, and rice, are preferable to all others. Bread produces too much feculence. Fine flour boiled with milk, forms (as we have experienced) a most excellent diet for chronic dysenteries. Broussais cured great numbers of patients in the military hospitals by this diet.

"Dans la pratique oivile, il y a, pour entretenir la nutrition d'un diarrhéique, sans lui laisser beaucoup d'excrémens, mille ressources dont on est privé par les réglemens des hôpitaux militaires. On trouvera dans les semoules, les gruaux, les pâtes où vermicelles, pourvu qu'ils soient trés-fins, des moyens de varier agréablement la nourriture, en combinant ces diverses substances avec le lait, la crême, les œufs, le sucre, selon le goût du malade et le degré de sa faculté digestive. 262.

When the digestion is pretty good, meat broths may be cautiously allowed. Whenever they render the stools more frequent, they are to be discontinued, at least for a time. Sweet and ripe fruits, rejecting the seeds and rinds, may be sometimes allowed as a variety.

In chronic phlogosis of the mucous membrane of the colon —in other words, chronic bowel-complaints, our author reduces the list of medicinals to two classes—stomachics and anodynes. When the general erethism attending the commencement of the complaint is completely subsided, but some local pain remains, M. Broussais prescribes solutions of gum tragacanth rendered gently anodyne by Sydenham's laudanum, varying the dose from 12 to 50 or 60 drops of the tincture. These medicines will not be serviceable unless combined with the rigid regimen before alluded to. As the dysenteric symptoms subside, gentle tonics, and gradually increasing aliment are to be allowed. Astringents, at all times, M. Broussais thinks, augment the phlogosis by checking the alvine evacuations. A little wine, or an infusion of cinchona or canella alba extremely weak, is sufficient to solicit the stomach to a resumption of its functions towards the close of the disease. Ipecacuan, as a vomit, our author has not found useful, excepting at the very beginning, when the stomach happens to be loaded. It does not possess, he thinks, any anti-dysenteric properties. The action of vomiting he does not believe to possess any power in checking the increased peristaltic motion of the intestines. When phlogosis of the mucous membrane of the bowels is the cause of the purging, vomiting cannot arrest it:—if the diarrhœa depend on irritating matters in the primæ viæ, then it does harm by checking the operation of Nature in removing them. In short, it is not the mere *symptom* of purging that we are to combat, but the cause of the phenomenon.

From a number of experiments made with tincture of opium on eruptions of the skin, M. Broussais comes to the conclusion that its first effect is highly stimulant, quickly followed by a sedative operation. He endeavours to explain its beneficial effects in dysenteric complaints on this principle—namely, that, though it may give a momentary increase of excitement to the stomach and upper intestines, a torpor is subsequently induced, which allays the spasmodic contortions of the colon for a certain time. The precautions which he thinks are necessary in administering this remedy in the class of diseases under review, are 1mo never to exhibit opium when a *general* inflammatory diathesis prevails. 2ndo to forbid the use of this remedy when the stomach is phlogosed. 3tio. to abstain from laudanum until the bowels are cleared of all stercoraceous or bilious secretions, either by the spontaneous operations of Nature, or by the effects of aperients administered for that purpose. 4to. to exhibit this anodyne at first in small doses, and in a demulcent vehicle, when the local erethism is considerable; gradually augmenting the dose till the effect of procuring some sleep is obtained, moderating, if necessary, the stupifying effects of the opium by vegetable acids.* We shall give M. Broussais' rationale of the operation of opium in dysentery in his own words.

> " L'excitation passagère que sa première impression détermine' est fort peu ressentie par le colon phlogosé: c'est l'estomac principalement qui doit la supporter; il ne faut pas qu'elle aille jusqu'à augmenter sensiblement l'activité de l'appariel circulatoire. Au contraire, la stupeur toujours plus prolongée qui succède à cette stimulation, est partagée par toutes les ramifications nerveuses, et surtout par celles qui se distribuent dans les fibres musculaires et dans les papilles de la partie souffrante." 371.

We may here observe, that we believe the above observations of M. Broussais to be correct, as relating to the exhibition of opium *alone* in dysenteric affections. Our continental neighbours have such a dread of poly-pharmacy, that they deprive themselves of many valuable combinations used in this country. They have no idea that a combination of opium and antimony or ipecacuan, or of both of these with mercury; can have any better effect than these medicines separately administered. In this country we know better. Ample experience has demonstrated the safety with which opium may be given, in the above and other formulæ, during even acute inflammation of various organs; and in no class of complaints is the combination so powerful and beneficial, as in that which forms the subject of this essay. We trust, however, that the investigation which we have entered into here, will have no inconsiderable effect in restraining the practice of *purging* in dysenteric affections of the bowels in this country, where it has reigned since the days of Cullen—the words, "*retentis plerumque fecibus alvinis*," appearing to have radiated from alma mater the dangerous principle of *purgation*, as almost the sole remedy. The subject of the present article being one of the highest importance, we will be pardoned, we hope, for detaining our readers some time longer, while offering for their attentive consideration a few necrological histories from the eminent pathologist whose work is under review; which histories we shall abbreviate as much as possible, while we are select in our choice of those which are most likely to leave a salutary impression on the mind.

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* Care must be taken that in administering vegetable acids the opium be no longer in the stomach, since, according to the experiments of Orfila, a mixture of acids and narcotics irritates and even inflames the gastric mucous membrane."

Case of Acute Gastritis simulating Catarrh and low continued Fever. "M. Beau, sub-assistant surgeon of the 18th regiment, 24 years of age, had had several attacks of severe catarrhal affection, and also of hæmoptysis. He was very studious, and had undergone great fatigues at an hospital in Gorizia. While there, he breakfasted for a fortnight on bread soaked in sugared wine, being before accustomed to coffee. This regimen he found heated him much, and rendered him more than usually irritable. He sent for M. Broussais on the 7th March at Udina, who found him complaining of unpleasant heat in the stomach, want of appetite, considerable fever, pulse full, hard, occasionally intermittent, intense heat, but little thirst, pain in the chest, with sense of constriction, great anxiety and restlessness, inclination to cough, but fear of throwing the respiratory muscles into action, on account of the pain. *The pulmonary irritation and force of the pulse indicated venesection, but the intermissions of the pulse and the patient's having been in an hospital where typhus prevailed, prevented M. Broussais opening a vein!* A decoction of figs therefore, and a blister to the sternum were prescribed, but the blister was not acceeded to. Next day all the symptoms were aggravated, and the young man himself loudly demanded to be bled. Broussais, instead of complying, ordered eight leeches to the epigastrium. The young man applied sixteen. The leeches bled profusely, and the flow of blood could hardly be stopped. Next day there was great faintness, with some delirium; but the pulse was down, the thoracic pain gone, and scarcely any cough. M. Broussais ordered a decoction of bark, with a little wine, and gummy emulsion. These were vomited as soon as swallowed—(and fortunately too we think)—the same followed the exhibition of aromatic and antispasmodic juleps. Gum water with lemon juice succeeded better. In two days the pulse rose again, with anxiety, and efforts to cough—gum water acidulated continued. It is needless to say, that the patient got worse and worse—a consultation was called, but the new physician saw putrid fever instead of gastric inflammation in the case; stimulants were lavished on the patient—"les stimulans de toute espèce furent prodigués." "The unhappy youth had no longer strength to vomit them up, but his cruel sufferings augmented in proportion to the quantity of the medicine he swallowed," and he died on the 16th day of his illness.

"*Dissection*. Pia mater, particularly over the left hemisphere, strongly injected—cerebral substance firm and red—ventricles a little dilated with serum. In the chest every thing sound. In the abdomen, the stomach was found contracted to the size of a small intestine—of firm consistence—the mucous membrane thickened, and throughout its whole extent of a lived red colour, in some points black. All the intestines contracted, and their mucous lining of a shining red colour."

This case happened when M. Broussais was opening his eyes to the disastrous effects of Brunonian practice in fevers, and when he was beginning to discover local inflammation, especially of the mucous membrane of the primæ viæ, as the basis of many reputed idiopathic fevers. The practice therefore detailed above, may be not only accounted for, but, in some degree excused. Our author has no hesitation in believing that he might have saved the patient, if he had confined him rigidly to mucilaginous drink from the time he first saw him. It was this case that first led him to question the power of bloodletting in *completely* subduing muco-gastric inflammation. Further experience confirmed him in the belief that bleeding has but a very subordinate control over phlogosis seated in the hollow and thin viscera, especially in their inner surfaces. It is over inflammation of the solid and parenchymatous viscera, rich in sanguineous capillaries, and the membranes that cover them, that bleeding exerts a masterly control. The cough in this and in numerous others under his care, was purely sympathetic, arising from irritation of the extremities of the par vagum in the stomach. In respect to the brain, the central organ of sensation, how can we expect that this part can escape in diseases accompanied with much pain. "Tel organe qui n'éprouvait d'abord qu'un trouble sympathique, peut s'affecter organiquement par le seul effet de la douleur." This we are sure is sound pathology.

Acute Gastritis imitating low Fever. Venter, a young man of 22 years, presented himself to M. Broussais on the 1st July, 1807, with symptoms of stomach affection, viz. anorexia, slight nausea, some prostration of strength. These symptoms had been of six days standing. Suspecting gastric susceptibility bordering on plogosis, M. Broussais only prescribed demulcent and acidulated drinks. He grew quickly better, which induced the Doctor to grant him some victuals, especially as it seemed hard to refuse them to a man, who all day walked about the wards and corridors of the hospital. After spending five or six days in this ambiguous state, the young man began to complain that he passed his nights badly—that he had cold chills, and that his mind was confused. M. Broussais thought he could not run much risk, in ordering for these symptoms, some doses of cinchona and a little wine. Two days of this treatment produced no amelioration, and M. Broussais paid the patient a visit at night. He found the young man with hot skin, contracted visage, accelerated pulse, and restlessness. He now became convinced that he had to deal with obscure gastritis, tending to the acute form. The most rigid regimen was, therefore, instantly adopted, namely, mucilaginous acidulated drinks. But he was not relieved—there was delirium at night—trembling efforts to get out of bed—grinding of the teeth. He expired the next evening.

Dissection. No appreciable lesion in the head or chest. The mucous membrane of the stomach thickened, red, and, in some places, even black. The inner surface of the intestines presented the same appearance. From the stomach to the anus nothing was to be seen in the alimentary canal but a white firm exudation, very difficult to detach from the inflamed surfaces of the guts.

The following case is still more insidious than the one just related, inasmuch as it masked the greatest malignity under a benign and perfidious aspect, uniting the rapid march of *acute*, with the symptoms of *chronic*, gastritis.

Case of Acute Apyretic Gastritis. Rapion, 25 years of age, robust and well made, had, for several weeks past, lost his appetite, and felt some nausea at the stomach. He took (of his own accord) an emetic, which exasperated the symptoms. Entered the hospital, on the 5th June, 1806, five days after taking the emetic. He had now anorexia, constant nausea, head-ache, slight febrile movement, and relaxation of the bowels. On a more minute examination, M. Broussais found that Rapion vomited his food, and that he had a constant pain in his stomach, extending to the whole of the abdomen, with a sense of constriction, small, frequent pulse, skin rather cold than warm, tongue natural, strength undiminished. M. Broussais suspected gastritis, and prescribed mucilaginous acidulated drinks, with fomentations to the epigastrium. During the next four days there was no alteration in the symptoms. On the 5th day M. Broussais found the patient stretched on his bed, with his clothes on, for his sufferings and the diarrhœa did not permit him to lie in bed undressed. He appeared somewhat delirious; complained of being very ill;—yet his strength was not greatly prostrated. A few hours afterwards he was seized with convulsions and horrible anxiety. He fell into a state of syncope, and expired.

Dissection. Nothing particular in the chest. In the abdomen the whole intestinal canal was contracted—the mucous membrane of a deep red colour, and thickened from the cardiac orifice of the stomach to the anus, but without ulceration.

The following case of *chronic* gastritis will exemplify the effects of good and of bad regimen.

Papillon, 22 years of age, entered the hospital of Udina on the 18th July, 1805, complaining of distaste for all kinds of victuals, and constant inclination to vomit, with diarrhœa. He reported that he had been ill but sixteen days, yet he was considerably emaciated. His tongue was moist and clean, his pulse nowise febrile. M. Broussais pronounced the disease to be chronic gastritis, and put the patient on acidulated mucilaginous drinks, with a very little bouillie for food. At the end of three or four days the nausea and diarrhœa were considerably mitigated—the appetite had returned a little, and in four days more was very considerable; the diarrhœa being reduced to two or three motions in the 24 hours, and those passed without pain. Still M. Broussais considered it dangerous to allow the patient more solid or abundant food than a little soup, or rice with a small quantity of bouillie. All at once, however, the patient was found complaining of pain in the stomach, nausea, vomiting, and great increase of the diarrhœa, with tenesmus. M. Broussais caused his bed to be searched, and it was discovered that the patient had gorged himself with cold meat and bread. From this relapse till the patient's death, which took place twelve days afterwards, he vomited every thing which was taken into the stomach. The diarrhœa amounted to severe dysentery, and the march of the marasmus was surprising. All this time the circulating system shewed no evidence of febrile movement.

DISSECTION. Body greatly emaciated—vessels of the head engorged, and the cerebral substance red and firm—thoracic viscera sound—stomach so contracted as to leave no cavity—intestines greatly contracted also—mucous membrane thickened, dry, and of a deep red colour, resembling linen steeped in port wine—the mesenteric capillary vessels much injected, while their trunks contained hardly any blood. The serous or peritonæal covering of the intestines unaffected. The body, when opened, exhaled a remarkable ammoniacal odour.

We find that our limits will not permit us to introduce more than another case.

Chronic Muco-Enteritis, propagated to the Stomach. A drummer in the 9th regiment of the line, 24 years of age, slender, but active, became affected with an intermittent fever for two months, in Germany, without using any remedy. He was then sent to an hospital, two months after which he came under M. Broussais at Udina. He was now emaciated in the second degree—had from five to six stools *per diem*, with colic and much uneasiness. The pulse was nowise febrile. He was placed on rice water, mucilaginous acidulated drinks, and farinaceous aliment. In a few days the diarrhœa was reduced to two stools *per diem*, without pain—the appetite returned—the complexion cleared, and the patient was in full march towards convalescene. M. Broussais now ventured to gradually increase the food until he came to ⅔ds allowance or more. All at once the diarrhœa and colic returned, and in three or four days, he lost all the flesh he had gained in thirty. He grew rapidly enfeebled. M. Broussais now learned that the impatient patient, tormented with his appetite, had purchased provisions from his comrades frequently. He was now put back to the original regimen; but too late! In ten days he was reduced to a complete state of marasmus, although the bowel complaint was moderate, not exceeding two or three stools daily. Vomiting now came on, with entire loss of appetite, great anxiety, frequency of pulse, and heat of skin. It was now evident that the phlogosis had reached the stomach. Yet he lived twenty days longer, when he died a perfect skeleton. On dissection, the whole alimentary canal was found so contracted, as to have all its internal surfaces almost in contact. In the stomach, this membrane was red, thickened, and covered with a yellowish exudation about the pylorus.

Throughout the whole of the intestinal canal, the mucous membrane was dry, and of a logwood colour with scarcely any fœcal contents.

Before closing this paper we shall introduce an extract from Dr. Abercrombie, shewing that gentleman's sentiments respecting the treatment of affections of the mucous membrane of the alimentary canal.

"The active form of the disease, especially in its early stages, is to be considered as an inflammatory affection of the most dangerous kind, and requiring to be treated with activity by the usual remedies—especially bloodletting. The first urgency of the inflammation being thus subdued, if the pulse continue frequent, digitalis is given with much advantage, or Dover's powder, in repeated doses; and, after the necessary bleeding, moderate opiates may be given, with mucilaginous articles and absorbents, or opiate glysters. The effect of purgatives is extremely ambiguous. In the more severe cases, they evidently aggravate the symptoms. There may be cases in which it is expedient to evacuate the bowels, as when the discharges are scanty and slimy, with retention of natural fœces, but the practice requires caution; and in the more common form of the disease, with copious discharges, they appear to be injurious. Though the evacuations in such cases may be of an unnatural appearance, it is to be remembered, that this is the result of morbid secretions, not to be corrected by purgatives, but by curing the disease on which they depend. When the disease appears to be seated in the lower part of the great intestine, bleeding from the hæmorrhoidal vessels might probably be useful. When the tormina are severe, with tension of the abdomen, the tobacco injection might probably be employed with benefit. Great attention should be paid to the ingesta; to keep them in as small quantity as possible, and of the mildest quality.

"It is in infants that the disease most frequently occurs to us; and there is some difficulty in determining what is the best treatment. This results from the difficulty of distinguishing the disease, so that, when a case terminates favourably, we cannot say, with certainty, that it really was an example of this dangerous affection. In some cases, in which there is no vomiting, a gentle emetic seems to be useful in the early stages; afterwards, Dover's powder, combined with chalk, opiate glysters, opiate frictions, opiate plaster, and tepid bath. In some cases, the free use of digitalis seems to be extremely useful, and blistering on the abdomen. It is worthy of consideration, whether topical bleeding would be admissible in the early stages, when the disease exhibits much activity. In the advanced stages, when there is a tendency to sinking, wine is to be given very freely; when there are threatenings of coma, blistering on the neck should be employed; from both these conditions, infants often make most unexpected recoveries. When the case is accompanied, as it often is, by a peculiar and most ungovernable vomiting, blistering on the epigastrium seems to be the most effectual remedy; and considerable benefit, on settling the stomach, is often obtained from the vegetable bitters, as the powder of colombo root, in doses of a few grains, repeated at short intervals. In the protracted bowel complaints of infants, in which there was reason to apprehend this affection in a chronic form, I have found nothing so useful as lime water. The teeth are to be attended to, and the gums cut, when they appear to be giving irritation.

"In the chronic form of the disease, what we have to contend with is either the chronic fungous inflammation, or ulceration. The treatment is extremely precarious, and very few of the cases end favourably. The remedies to be kept in view, and which appear in some cases to be useful, are chiefly the following: Lime-water, the vegetable bitters, and astringents, especially the cortex cuspariæ and logwood; preparations of iron, as the tincture of the muriat, in large doses; small quantities of mercury, with opium; the resins, as turpentine and bals. copaivæ, combined with opium; sulphur, with opium, repeated blistering on the abdomen; bandaging with a broad flannel roller; the tepid salt water bath."

Ed. Journal, p. 347.

In respect to Dr. Grimaud's Dissertation on Inflammation of the *Follicles* of the Mucous Membrane of the Intestines, as distinguished from common Inflammation of the Membrane itself, we have only to say that we do not believe such a distinction to exist in nature—and, if it did, we are quite sure that it would never be recognised in the living subject, at least by Dr. Grimaud's diagnostics. We shall not, therefore, waste time in entering into any analysis of the paper. Those who are more curious, may refer to it in the Journal Complimentaire, for December 1820.

It is somewhat curious that Broussais' work should never have been translated into the English language, while several very indifferent publications have been honoured with that distinction. We confess that a literal translation would subject the English reader to a great loss of time, in consequence of endless repetitions, and redundancy of cases, with which the work is swelled out to two volumes. We are disposed to think, that we have rendered a translation, in a great degree, unnecessary, by analysing the different parts of it in this article, and in the eclectic review on peritonæal inflammation. To most of our readers, the original work is virtually unknown, and to *them* we think we have offered something valuable. To those who were previously acquainted with M. Broussais' work, we hope this concentrated analysis of its most interesting features, will not be unacceptable, as a refresher of their memory, when, probably, they would not again go through the original. At all events, we have endeavoured to be useful to our brethren on the present occasion, and can only hope that our labour has not been thrown away.

Some Account of the Practice and Principles of the New Italian Doctrine: extracted chiefly from the Primæ Lineæ of Syrus Borda, *and the Prolusione of* Tommasini.

"Cæterum cum nova hæc doctrina clariore in luce collocari desiderat, ac multimodis temperari possit, ideo quæ in medium protulimus nequaquam pro certis probatisque cuiquam obtrudere volumus, priusquam us utilitas fidem astruat, quam tamen syeramus ex eorumdem usu et periclitatione secuturam." *Institutiones Pathologicæ, auctore Francisco Aloysioi Fanzago.*

(From the London Medical Repository, for June 1821.)

The work, of which we now propose to give an abstract, was composed by Giacomo Tommasini, Clinical Professor in the University of Bologna, and intended as an introduction to his course of lectures. His object in publishing it was to furnish the medical world in general with an account of the principles of the "new Italian doctrine, which had obtained considerable fame in all parts of Italy, acquired the support and sanction of several of the most celebrated Professors, and and served as a basis on which an extensive body of medical men had formed their pathological ideas and regulated their practice. It had, however, in the opinion of our author, been exposed to unjust and unmerited obloquy; its principles had been misrepresented, and their practical consequences either perverted, or carried by pretenders, to an alarming and unwarrantable extent.

We are, however, fully aware, that works, merely of a theoretical nature, are not likely, in the present day, to gain general attention. So many theories have arisen within our own recollection, which, after strutting their hour, have been consigned to the tomb of all the Capulets, that we thence derive an explanation, if not an apology, for the spirit of empiricism that now domineers among us; a spirit, which either holds in contempt all theory whatever, or only condescends to avail itself of the small and partial doctrines, that limit the excursions of many of our modern pathologists. On this account, we have judged it expedient, before entering into a detail of the theory itself, to render some account of the practice to which the doctrine of the contra-stimulists has given rise; hoping its extraordinary and unprecedented hardihood may excite in our readers some curiosity to become acquainted with the speculative opinions on which such a practice may have been grounded. The chief boast, indeed, of the supporters of this doctrine is, its practical importance; that, although its early rudiments may have been formed in the closet, it was matured in camps, hospitals, and the extensive practice of many of the most enlightened Physicians of Italy: and they contend that a larger experience, or a more ample set of practical experiments, has never before been arrayed in favour of any other doctrine, from the time of Hippocrates to the present day. Let us, however, concede, that all the speculations proposed by Rasori, Borda, and Tommasini, are merely the phantoms and reveries of a visionary imagination; there will still remain for discussion and experiment, the following interesting inquiries. Is there not a class of medicines of themselves capable of curing many inflammatory disorders? of affording a most efficient auxiliary in cases where large bleedings are necessary? and of providing the Physician with a powerful substitute, when he trembles at the farther use of the lancet? Are we not in the daily habit of blending in our prescriptions, medicines whose modes of action on the human frame are in opposition, and annihilate each other? Leaving the latter question to be decided by future observation, the approaches we have of late years apparently made towards the doctrine of contra-stimulation, by the employment of mercury in irritis, of colchicum in inflammatory affections of the joints, and of Prussic acid in various diseases of the chest, evidently accompanied with increased arterial action, may lead us to hope, that a still more abundant collection of similar remedies is in store; and that the former question, at least, may be answered in the affirmative. Now this is the precise point to which we would solicit the attention of all those Physicians to whose superintendant care our large hospitals are intrusted. Let us, at the same time, warn the private practitioner from the dangerous ground; else, let him advance with the utmost circumspection in the free employment of these *heroic* remedies. In their use, under all circumstances, two conditions are absolutely necessary: the first is, that an inflammatory diathesis be most evidently present, and that the dose, small at first, be increased in proportion to the degree of excitement: the second, that the Physician visit his patient, as the custom is in the hospitals of Germany and Italy, twice a day, at least, for here it would be criminal to serve by proxy.

Of the two following tables, the first, containing the doses of some contra-stimulant medicines, as they are usually prescribed by the followers of the Rasorian doctrine, was given us by a physician who has attended the practice of Borda in the hospital of Pavia. The doses were set down by Dr. Carlo Bellati, one of the physicians to the hospital, a gentleman of great learning and high character; and who, from his well-regulated habits of philosophising, is little inclined to form extravagant opinions on any subject. From his pathological observations, and the dissections of the ingenious and accurate Pannizza, much light is expected to be thrown on the Pellagra, a peculiar and formidable disease, endemic among the country people in many provinces of Italy. It is understood to be connected with inflammation of the membranes investing the spinal marrow; and the dissections of Pannizza are master-pieces of the art. The following prescription, and it is needless to multiply them, was ordered by Borda for a patient affected with peripneumony.

R Calomel, gr. iij.
Ext. Hyosciam. gr. v.
Kerm. Mineral. gr. iv.

This formed one dose; and eight were taken daily for nine days. The patient recovered.

Tartar Emetic, from half a dram to three drams daily.
Extract of Aconite, from two grains to three ounces daily.
Powder of Digitalis, from two grains to ninety-six grains daily.
Gamboge, from six grains to thirty every three hours.
Cream of Tartar, three ounces a day for a month.
Muriate of Lime, from a dram to half an ounce daily.
Extract of Hyosciamus, from two grains to twenty-four every two hours.
Carbonate of Soda, a dram to an ounce daily.
Carbonate of Ammonia, half an ounce daily.
Ammonia, a dram to two drams daily.
Soda, a dram to three drams daily.

Of Belladonna, the powder of the root is esteemed the strongest preparation; next the powder of the herb; and lastly, the extract.

A grain of the root may be given every three hours, increasing the dose to a scruple.

Three grains of the herb on to half a dram every three hours.

Six grains of the extract on to two drams every three hours.

The powder of Nux Vomica, from a grain to one dram daily. The same of the extract.

The infusion of digitalis is considered as less certain in its effects than the powder; many unexpected and alarming symptoms sometimes manifesting themselves during the use of the former; and the powder therefore is more generally ordered.

A table of Stimulants and Contra-Stimulants.—As the stimulants, as well as the contra-stimulants, are supposed to exercise an *elective* action on certain parts of the system, this table, by omitting to point out these several elective actions, is necessarily defective. We have been disappointed in our expectation of receiving the Materia Medica arranged according to the method of Borda.

Stimulants.	*Contra Stimulants.*
Heat, opium, musk, ammonia, alcohol, wine, beer, Peruvian bark[1], certain aromatics, camphor, red particles of the blood, grief[2], and the passions in general, animal food, the contagions of miliary fever, small-pox, measles, pemphigus, typhus, petechial fever; the matter of lues, and the poison of hydrophobia; the perspirable matter.	Cold, blood-letting, all metallic preparations[3], and oxydes; the greater number of bitters, emetics, and drastic purgatives; Prussic acid; and aqua pruni lauro-cerasi, digitalis, hyosciamus, belladonna, aconite, cicuta arnica, gratiola, phellandrium, valerian, saffron, serpentaria, coffee, mustard, pepper, horse-radish, camomile, contrayerva, blisters[4], and cantharides; phosphate of lime, cream of tartar, nitre[5], acids, oxygen[6], poison of the viper[7], the gastric juice, the bile, and urine; fear.

It is supposed that the stimulating principle of this drug[1] is distinct from the astringent, the bitter, or the gallic acid; and that the various combinations substituted for it, are, in reality, contra-stimulants.

Previously to a dissection, which we witnessed, of a soldier in the Val de Grace, at Paris, who had long suffered under nostalgia[2], Broussais observed, that in all similar cases he had constantly found water in the ventricles of the brain; and in this instance a large quantity was also detected.

Dr. Yates, formerly in the service of the East India Company, who died at Rumford, was, I believe, the first who administered calomel[3] in large doses, in complaints of a decided inflammatory character, as pneumonia, &c. In an account of practical observations, made in the hospital for the poor at

Petersburgh, it is said, that calomel is given with advantage in inflammations of the stomach and intestines, to the amount of two scruples a day: and that no disagreeable consequences ever follow its use. With regard to the enormous doses of tartar emetic that may be administered in diseases of the sthenic diathesis, we have the additional evidence of the author of the "Remarks on the Contra-Stimulant System of Rasori and Borda." This gentleman was an eye-witness of the experiments made by Rasori, in the hospital of Milan, to determine the degree of contra-stimulation possessed by antimonials in general, and kermes, and tartar emetic in particular. He is an opponent of the doctrine, and on that account, his observations may perhaps claim a more ready belief. He says, "the usual vehicle was a decoction of barley, for which an infusion of camomile was substituted in the few cases where the vomiting became violent. The smallest dose of tartar emetic was a scruple a day; a medium dose being from a dram and a half to two. In a case of hydrothorax, he prescribed six drams a day for six days, and the patient was cured. It is incomprehensible, he adds, how patients can support such extraordinary and unheard of doses of tartar emetic, with little or no vomiting. In some cases, a severe vomiting certainly did come on; but these were few indeed, in comparison with those who bore with impunity two drams of tartar a day; neither can this phenomenon be attributed to any imperfection in the mode of preparing the medicine; for the other Physicians used the same preparations successfully in small doses, as an emetic. Some may suppose that the tartar, not being well dissolved in the vehicle, sunk to the bottom, and remained there; and this sometimes really happened; but when Rasori repeated his visit, he constantly agitated the mixture; and he has made the patient swallow the deposit in his presence, amounting, in some cases, to a whole dram.

In addition, we can state, that specimens of the calomel and tartar emetic, used in the hospital of Pavia, were brought to England by Dr. Anderson, and found to act in similar doses, exactly as our own preparations of the same medicines.

The following case shows that tartar emetic may be given in an excited state of the system in comparatively large doses, without provoking vomiting. A few years ago, we attended, in company with Mr. Astley Cooper and Mr. Manning, a patient, whom it was proposed to throw into a state of delquium, for the purpose of facilitating the reduction of a luxated humerus, of long standing. Mr. Cooper was in hopes that this end might be attained by placing the patient in a hot bath, administering, at the same time, small doses of tartar emetic, so as to produce continual nausea. The gentleman accordingly went into a bath, heated to as high a degree as he could well bear, and about twelve grains of the medicine were exhibited at intervals, within the space of half an hour, without exciting either nausea or vomiting. The dose was considered great, and other symptoms manifesting themselves, it was not judged prudent to push the medicine farther, for the patient became completely drunk: he lost the use of his limbs, and talked and behaved exactly like a man in a state of intoxication. He was removed from the bath, put to bed, and gradually recovered; but the next morning he was hardly able to recal any of the past transactions.

That this apparently powerful stimulus[4] should be ranked among the contra-stimulants, certainly appears surprising; such, however, is the opinion entertained of its action by Rasori and Borda. A paper on the subject, by Dr. Triberti, may be seen in Brugnatelli's Journal for 1810. Borda, although he is one of the Physicians to the hospital at Pavia, and a professor in the university, is forbidden to detail, during his visit, the principles on which he conducts his practice—a circumstance which, to a stranger, uninformed of the political or other motives leading to such a prohibition, appears unjust, anomalous, and detrimental to the progress of medical science.

The author of the remarks says that he witnessed the exhibition of this medicine[5] to the amount of three ounces in a day; and with regard to nitre, he states, that Borda had instituted a set of valuable and interesting experiments. In a case of sthenic diarrhœa, he gave it to the amount of three ounces in one day; and Marabelli, on analysing the urine of this patient, evacuated in one day, found in it one ounce and a half of the salt. The same author, under the astonishment he feels at the exhibition of doses so enormous, asks, whether the fact may not be explained by supposing that the vitality of the stomach is blunted, and that it is rendered paralytic? But this supposition cannot apply to the patient cured of hydrothorax, who took six drams of tartar emetic daily.

In the institutions of the Materia Medica, by Schmitt, of Vienna, oxygen[6] is ranked among the substances that debilitate (depotenziren) the system; and he assigns the same place to all bodies in which it predominates.

When a viper-catcher is bitten[7], he has immediate recourse to theriaca and wine, generally they say, with success. The quantities he can bear of wine, without being intoxicated, are alluded to with astonishment.

Having given this general detail of the division of substances into stimulants and contra-stimulants, we shall, in the next place, extract from the Primæ Lineæ of Borda, a few observations on some contra-stimulant remedies in particular.

The diathesis which consists in an excess of stimulus, when no inflammatory affection of any viscus is present, is treated more advantageously with contra stimulants than by blood-letting, particularly when the system is not over-loaded with blood. The Physician is warned against an excessive use of the lancet, as it is apt to make the diathesis pass into one of an opposite character, threatening the life of the patient; and he recommends the simultaneous employment of contra-stimulants, which, acting directly on the fibre, prevent the necessity of multiplied bleedings. Much experience is required, and many practical cautions are to be learned, before the Physician can arrive at that degree of knowledge in alternating and mixing the contra-stimulants with bleeding, which will enable him to proceed with confidence and self-approbation. Among the remedies associated with blood-letting, Borda prefers the aqua pruni lauro-cerasi, and beginning with small doses, increased drop by drop, he has prescribed in diathesis, arrived at the greatest height, one hundred drops every two hours. It acts in the same way as the Prussic acid. Digitalis, as it acts more particularly on the arterial system, rendering the pulse unequal and intermittent, is apt to obscure our knowledge respecting the degree of diathesis remaining in patients exposed to its influence; and for this reason Borda prefers the laurel water.

Phellandrii aquatici semina.—These were found serviceable in the first, and early in the second stage of phthisis, but of no avail in the third. The experiments of Borda also justify us in expecting much benefit from this medicine in inflammatory affections of the mucous membrane of the lungs, particularly when these supervene to catarrhs and peripneumonic complaints; but its use in advanced stages of phthisis has been greatly overrated by Hufeland. The dose, at first, is ten grains every two or three hours, increasing it to a dram, or, indeed to an unlimited quantity. "Tali via phellandrii semina phthisicis sanitatem compararunt, quorum puriformia sputismata calamitosam ac progredientem phthisim ominabantur.

Valeriana officinalis.—In placing this drug among the medicines that may be employed on account of their contra-stimulant action in diseases, chronic or acute, attended with asthenic diathesis, Borda expresses his fears of offending the established opinions of medical men. He praises its use in hemicrania and epilepsy; and having compared its effects on the system experimentally with those of stimulants, he adds, "et revera quondo nocuus ægrotanri videbatur cujusque indolis et gradus stimulus, valeriana apprime valebat." He praises its use in febrile diseases attended with a diathesis of excitement; and he requests that Physicians may judge his opinion concerning the contra-stimulant virtues of valerian, not by preconceived notions, but by new experiments.

Atropa belladonna.—This medicine may be given in those cases of asthenic diathesis which do not yield to the weaker powers of valerian, and in prosapalgia, or tic douloureux, it has been found serviceable. But in pertussis, Borda dwells with pleasure on the advantages he has reaped from the leaves and root of this plant. Children, to all appearance, past all human assistance, have been snatched from death by means of belladonna. At first, one-fourth of a grain is to be prescribed, to be augmented to half a grain, and advanced to two grains, according to the age of the patient, and repeated every three or four hours. Respecting its use in hydrophobia, he says, "Nec absum à præconio radicis hujusce stirpis, ut medicina prophylactica, in canum rabiem efferatorum, aliorumve animalium morsu; hác enim in re expertus loquor, et jure commendo efficaciam ejus; namque plures eadem à me medicati ita convaluerunt, ut nullum apparuerit in iis signum exacti morbi, vel curationis non absolutæ. Resistit igitur rabie venenatis hæc herba, ejusque vim ita contrastimulantem adjudico, ut systema, usu suo, obnoxium nil prorsus evadat veneni rabidi stimulum perceptioni, ac proinde addito tempore ita dispellatur, ut ejus reversio nequaquam fieri possit."

Conium maculatum, seu cicuta officinalis, may be administered in physconiæ, phthisis, and tabes mesenterica, and is considered as one of the best remedies in all scrofulous affections; but Borda most decidedly condemns the simultaneous use of peruvian bark, considering scrofula never to be of an asthenic nature. The muriates of lime and barytes he looks upon as still more powerful contrastimulants, and highly useful in cases, for the cure of which cicuta is inadequate.

Aconitum Napellus.—Borda, of late years, has used the extract of aconite in rheumatic, gouty, and syphilitic pains, consequent to mercurial frictions. He praises it, as one of the most valuable remedies in relieving morbid secretions of the trachea and bronchia. "Credo etiam obstupui animadvertens extractum aconiti nedum sputorum redundantiam occissime repellere, sed naturam eorum ita immtare, ut mihi omnem præperceptum abstergeret metum proximæ desperatæ phthiseos, cui mors, quasi saxum Tantalo, impendet." The extract varies very much according to the method in which it is prepared, nor do we seem well acquainted with the circumstances on which this difference depends; but the following example will illustrate the fact:—Ten patients were received into the hospital of Pavia*, threatened with phthisis pulmonalis, for whom the extract of aconite was ordered in doses suited to their several cases. One was taking half a dram at a dose; they all bore the medicine without any inconvenience, and their general appearance, indeed, gave hopes of their ultimate recovery. All the extract, however, prepared in the hospital being consumed, a fresh quantity was procured from the shop of an apothecary, and administered in similar doses. Every appearance of recovery vanished under the influence of this new preparation, and mental affections of the most alarming nature supervened, accompanied with other distressing symptoms. The hospital presented a scene of the utmost consternation. Borda flew to the spot; and considering the situation in which the patients were thrown as produced by the action of a powerful contra-stimulant, he determined on meeting it with an active remedy of an opposite character. Laudanum was administered; and, in the presence of a great concourse of pupils, he had the pleasure of witnessing the gradual and perfect restoration of his patients. The same extract, in a diminished dose, was prescribed the following day.

Gratiola Officinalis.—The result of many observations has confirmed Borda in the opinion, that many dysenteric complaints, that do not yield to our ordinary remedies, may be cured by gratiola. He has also ordered it in many intermittents, which so far from being relieved by peruvian bark, were aggravated by its use. When the diathesis is violent, gratiola produces neither vomiting or purging; and, in intermittents of a sthenic character, may be exhibited in powder, in doses from four to six grains, gradually increased, according to the degree of excitement and the constitution of the patient. The decoction is equally efficacious. Gratiola is considered as more powerful than any other antidysenteric medicine; and Borda has, therefore, relinquished the use of ipecacuan. On the whole, it is an active contra-stimulant, and may be employed in mania, and other complaints where we wish to subdue a strong diathesis of stimulation.

Hyosciamus Niger.—The first object of Borda, in his observations on hyosciamus, is to combat the opinion of those who consider that its action is analogous to that of opium. He contends that it operates in a manner diametrically opposite; that it produces sleep, calms convulsions, and allays pain in diseases of excitement, by a contra-stimulant action, while opium produces similar effects in complaints of an asthenic diathesis by its power of stimulating. He employs it more particularly in spasmodic and inflammatory coughs, whether consequent on long-continued peripneumonies, or attendant on nervous patients. "Casus autem, in quibus hyosciamus remedium præsentissimum, est phthisis ab immodica bronchiorum motilitate caussata, cui adsocietur sicca tussis inquies cum dolore versatili in regione thoracis, cui nulla recreatio sanguinis extractione, tum topica, tum universa."

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* In the hospital at Pavia, the medicines are usually repeated every three or four hours.

Digitalis.—Borda considers this medicine as one of the most valuable of which the Materia Medica can boast; and induced by the example of Withering, and its extensive employment by other English Physicians, he determined on ascertaining, by experiment, the respective powers of the different species of this herb, viz. the purpurea, lutea, ambigua, and lanata, or epiglottis, as it has been called by Brua.

He says, "In the purpurea it is evident that all the well-known powers of the medicine are concentrated. The lutea is next in rank. It shows considerable contra-stimulant powers, and may be used in dropsies, catarrhs, and peripneumonies, and also in various complaints affecting the lymphatic, nervous, and arterial systems, in which, however, the peculiar virtues of the purpurea exceed my powers of commendation. I cannot bestow much praise on the ambigua, which, in fact, can boast only of the name of digitalis."

His experiments on the epiglottis convinced him that it also possessed very powerful diuretic qualities, and that it even manifested the strong contra-stimulant powers, and produced the fatal effects flowing from either a too liberal use of the purpurea, *or from its being administered in a diathesis of contra-stimulation.*

The last observation may, perhaps, furnish us with a new guide, when examining into the powers and doses of medicines and poisons. If the capability in the system of tolerating contra-stimulants be in the ratio of the excitement present, experiments on living animals, made in reference to the employment of any poison, in a state of disease, will be chiefly serviceable in determining the minimum dose, the point from which we may start with safety. But the same guide may, perhaps, demand, whether the free use which some practitioners have made of digitalis, hyosciamus, belldonna, &c. has not been empirical, indiscriminate, and detrimental, conducted without a landmark or a beacon, and only limited in mischief by the apprehensions excited on the appearance of certain deleterious effects.

An Account of the New Italian Theory of Physic.
By Giacomo Tommasini.

This work is offered to the public in the form of a lecture, as it was delivered by the professor, introductory to his course of clinical instruction. The substance of the doctrine may be contained in a very few simple propositions; and the essay of Mantovani might perhaps, have been employed more advantageously for the purpose of presenting our readers with a detail of its principles. This last work, however, though more concise, does not so fully comprehend the dependence of the new doctrine on that of Brown; and, having been published at a time when the system had become familiar, and made a numerous host of converts, it seems to presuppose in the reader some acquaintance with the language and phraseology of the day. On the other hand, Tommasini appears to be as deeply engaged in overthrowing certain parts of the Brunonian doctrine, as in detailing the principles of his own; and this circumstance, at the present day, may render his lecture less interesting. It should, however, be recollected, that on the first promulgation of the doctrine of contra-stimulation, Brunonian principles exercised an extensive sway in many of the universities of Italy; that it became necessary, on that account, that the professor, in engrafting the new theory on such parts of the old stock as were suffered to remain, should fight his way step by step, and conciliate proselytes to his own doctrine, by pointing out the absurdities of that which had preceded it. Rasori, in a letter to Dr. Beddoes, from Pavia, in 1792, says, "In this university, undoubtedly one of the first in Europe, there is hardly a student, endowed with talents, who is not a Brunonian. Brown is in high esteem with some of the most respectable professors; and in other parts of Italy, I can assert, from my own knowledge, that old Physicians have not refused their sanction to many of the Brunonian principles."

Tommasini himself commenced practicc as a determined Brunonian; but doubts and suspicions of the soundness of the principles he had adopted seem to have entered his mind at a very early period. Diseases hastened his patients on to death, notwithstanding the most judicious application of those stimulating powers which ought to have arrested their progress, and reduced the excitability to a healthy standard. Observing the practice of others, he found that older physicians, satisfied with walking in the path of their predecessors, and even empirics, were more fortunate than he was. In vain did he question himself concerning these results, which rendered his mind unhappy, and manifested themselves in contradiction to all the principles of sound practice. In conference with his brethren, he was involved in angry disputations and irreconcileable quarrels; and he draws the picture of an Italian consultation, in terms which, in the minds of some of our readers, may perhaps awaken dormant recollections.

I remember to have been several times in consultation with Physicians of the old school, during the period in which, like most other young men, I was strenuously attached to the principles of the Brunonian doctrine. How great was the difficulty of uniting our sentiments! What a decided opposition between the plan of cure, and the remedies proposed by the several parties? On one side, purgatives, diluents, cooling medicines to bring down the strength; on the other, corroborants, tonics, and stimulants, were insisted on. Here, blood-letting, manna, tamarinds, saline drinks, and cathartics; there, ether, musk, ammonia, wine, and opium. Such was the contrariety of opinion, that conciliation was impossible; and it became necessary either that one of the consulting parties should give in altogether, or else, each resolving to mix up something of his own in the prescription, a farrago was compounded, containing drugs of opposite and contending qualities, one annihilating the effects of the other.

The appearances after death in patients who had died of nervous fevers, and in whose brains evident marks of inflammation were detected, joined with the unfortunate issue of his mode of practice, induced Tommasini to abandon the Brunonian doctrine entirely. Rasori's work on the petechial fever of Genoa, was published in 1800, and in this we pereeive the first hints of the contra-stimulant theory. At this period, Tommasini's mind was evidently prepared to give a welcome reception to a doctrine which, preserving several fundamental principles formerly regarded as sacred, may also be said to have *inverted* and given a different direction to others, rather than to have changed or abandoned them. Still, however, it must be acknowledged, that real and important alterations were proposed. and that a total change in the *methodus medendi* became the necessary consequence.

Tommasini commences his account of the new medical doctrine by observing, that it may, with more propriety, be termed the union of those pathological ideas, and of those practical and therapeutic views which are daily diffusing themselves: it forms an epoch, he says, and will, doubtless, occupy a distinguished rank in the annals of medical literature. It draws its origin from Iolidism and Brunonianism, and boasts a simplicity, unknown even in the systems of Hoffman, of Baglivi, or of Cullen, disentangling itself from many hypotheses, and unproductive speculations, that for a considerable time kept the followers of these illustrious teachers in a state of strange agitation, seduced them into the discussion of occult causes, and called away their attention from experience and induction. The new doctrine, besides, is well adapted to inspire confidence at the bedside of the patient, being unincumbered with abstractions, and matured in hospitals, rather than in the closet. It is granted, that the more general principles of Brown's theory are deduced from facts; such, for example, are his ideas of life, and his simple classification of diseases, and the high importance which he attached to the study of diathesis. Hoffman, Baglivi, and Cullen, had previously thrown light on the road which the energy and vigour of Brown's mind afterwards opened and made plain; and without the Elementa Medicinæ, the corner-stone of the new doctrine would never have been laid.*

This doctrine is founded on the destruction of two Brunonian idols, the objects of general adoration down to the concluding year of the last century. The first is the identity of action in all powers operating on the living fibre; this being, in every instance, stimulating, and varying only in degree. The second is the doctrine of indirect debility, or of a diminished excitement, occasioned by an excess of stimulation, and the appealing to this state as the cause of the greater number of diseases. The discovery of a contra-stimulant action showed the fallacy of the first proposition; and the great preponderance of diseases of excessive, over those of diminished excitement, being clearly ascertained, the latter proposition also fell to the ground. After pursuing this subject at some length, Tommasini proceeds to offer a compendium of the new doctrine, comprised within a few propositions. These are the following:—

1. That many substances act on the living fibre in a man-

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* How different is this from the view that Alibert has been pleased to take of the same subject. In his account of this philosopher, he has inserted all that Bacon would have omitted, turning his attention only to those failings of the man, on which Scarron, in his more ungracious mood, would have dwelt on with delight.

ner directly opposed to that of stimulation; and that those effects which Brown attributed to a negation of stimuli are to be ascribed to the positive action of contra-stimulants.

2. That contra-stimulants have the power of subduing, even without any evacuation whatever, the effects of an excessive excitement; and that when they are too liberally applied, diseases are produced, which the administration of stimuli alone can relieve.

3. That we have in the class of contra-stimulants a set of remedies adapted to the cure of every morbid condition resulting from excessive stimulation; and which may be used like blood-letting or purgatives.

4. That the capability of the fibre to support large doses of contra-stimulants or of stimulants, is in proportion to the increased degree of diathesis present, whether occasioned by sthenic or asthenic powers.

5. The discovery that this capability of supporting contra-stimulants, affords a juster measure of the intensity of the diathesis than any that can be collected from the symptoms themselves. There are, however, three other points belonging to the doctrine, not comprehended in the above, which Tommasini is at great pains to elucidate, in several parts of his lecture:—

1. That inflammation is invariably of a sthenic nature, and always consists in excessive excitement.

2. That a degree of contra-stimulation, more or less durable, is inherent and essentially connected with pain.

3. The distinction between diseases of excessive or defective stimulation, and those arising from a mere disturbance of particular parts, or from irritation.*

The author continues his refutation of Brown's doctrine of indirect debility, points out the absurdity of supposing that a necessity of using stimuli can arise as the consequence of the abuse of stimuli, and deplores the mischiefs that have resulted from considering indirect debility as the cause of the greater number of diseases. The idea of an asthenic inflammation, or of an inflammation connected with a deficiency of stimulation here presents itself, and the following is our author's manner of viewing the question.

Certain inquiries led me, in 1805, to declare, that every inflammation is in its nature essentially sthenic, or a process of increased stimulation, and that we should not be induced to consider it as connected with asthenia, from the circumstance of our seeing it occasionally take place in weak and debilitated subjects. He was also induced to seek for the causes of many diseases usually supposed to have no relation with phlogosis, in an inflammatory action, not, indeed, displaying itself at the commencement, but remaining concealed and unobserved until its effects became irremediable. The same inquiry obliged him to look on the fever accompanying the phlegmasia, not as the cause, but as the consequence of the local inflammations connected with this class of disorders; and to trace the origin of certain acute and long continued fevers, the puerperal fever, for example, typhus, the yellow fever, and the fever attendant on tabes, to those phlogistic processes discoverable in the bodies of patients dead of these diseases.

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* This part of the theory has been particularly illustrated by Rubini and Fanzago. We wish to recommend strongly to our readers the Institutiones Pathologicæ of the latter.

By thus discovering a phlogistic character in the greater number of diseases, acute and chronic, in typhus, yellow fever, the gastric fever, as well as in slow fevers, consumptions, venereal affections, physconiæ, cutaneous and glandular complaints, and also in many others generally looked upon as purely spasmodic; and by demonstrating that inflammation originates in an excess of excitement, and that it is at all times essentially the same; the influence of indirect debility, as productive of those complaints, immediately disappears, and the catalogue of diseases really hyposthenic, and curable by stimulants, is reduced to an inconsiderable amount. Another error, bearing every resemblance of truth, prevailed in the theory of Brown. It is that of inferring the nature of the diathesis, or the *kind* of disease, from the mode of action of the remote causes. Nothing, indeed, appears more plausible than the conclusion, that any disease whatever, produced by an excess of stimulating powers, is hypersthenic; and, on the contrary, that those occasioned by moisture, cold, and fear, are of an hyposthenic nature; and from the difficulty of determining the diathesis from the symptoms alone, it would, indeed, afford a great assistance, could we have recourse to this criterion in such a manner, that we could not possibly suspect the diathesis of excitement when all the remote causes had been of a contra-stimulant kind; and *vice versa*. Such, in fact, was the induction which Brown made with perfect fairness; and, as in the course of life, the greater part of mankind are exposed principally to the action of debilitating powers, as want, misery, moisture, cold, and certain depressing passions; so, in addition to those multiplied powers of an opposite kind producing indirect debility, he farther justified his opinion of the great preponderance of asthenic disease by the directly debilitating operation of many morbific agents; but facts ought to have been examined with impartiality, and on them, as a surer foundation than principles not well established, should we form our etiology, and our classification of diseases. A numerous class of disorders, of too stubborn a description even for Brown himself to bend, stood in opposition to this plausible theory; rheumatism, for example, pleurisy, inflammation of the brain and womb, &c. These diseases succeed to the action of cold or moisture; a violent inflammatory fever developes itself after a cold fit of a longer or shorter duration only curable by repeated bleedings; and, in many cases, without our being able to trace it either to the posterior or intermediate agency of stimuli. That dull inflammation of the liver, slowly forming itself as the consequence of depressing passions; the strong arterial action supervening to terror, and threatening progressive organic mischief, when not arrested by blood letting; puerperal peritonitis, believed by the Brunonians to be of an asthenic nature, in consequence of the great loss of blood and the sufferings that precede it, but which dissections have clearly ascertained to be of a phlogistic nature: these, and many other diseases, place the fact beyond a doubt, that diseases of increased excitement may be occasioned by debilitating powers. Facts so convincing render it altogether impossible to infer the hyposthenic nature of a disease from the causes producing it; and I think we may also conclude, that during a state of the lowest depression of the vital powers, let the means be what they will, sparks of a phlogistic diathesis may be kindled and excited into action. Tommasini endeavours to distinguish this operation from that of the vires medicatrices, by calling it a power creative of a diseased condition opposed in kind to the causes that preceded. He considers, in the next place, those changes in the diathesis of excitement by which the system, during the very progress of an inflammatory process, is suddenly thrown into a state of temporary contra-stimulation. To this succeeds a disquisition on the nature of pain, which Tommasini refers to a greater or less state of contra-stimulation. His ideas on this subject are, perhaps, peculiar to himself, and not sufficiently matured. He has, indeed, composed a treatise on pain, but the publication has hitherto been delayed. Some observations on irritation, accompanied with copious notes, conclude his exposition of the doctrine.

In order, says the Professor, to perfect the elements of a useful reform in pathology and the practice of medicine, it still remained to place in a clear light the morbid condition of the fibre known by the name of a state of irritation; a state not to be confounded with stimulation, being in truth produced by powers incapable in any dose, or under any circumstances, of creating a rightful excitement. These powers, equally distant from stimuli, and their abstraction, as from contra-stimulants, had already been contemplated by Brown, in chap. 3 of the fifth book of his Elements. It appears from the few but important remarks of that profound author, that he considered as irritants all those powers and conditions capable of disturbing and agitating, but not of stimulating or depressing; and that he looked on the local affection as incurable, either by the addition or subtraction of stimuli, and only to be relieved by the cessation of the local disturbing action, or by the expulsion of the irritating matter. But the doctrine of irritation has received still farther improvement from the profound researches of Rubini. He has proved not only that the action of irritants is confined by their powers of disturbing the system, and never exert an influence over the excitement of Brown, but he has also described the distinguishing characters of the diseases of irritation; and he is of opinion that a third diathesis may be found in this morbid state of the fibre; a diathesis neither implying an excess or a defect of stimulus, but merely a change of mode, or a discordance in the general movements. If I do not so far agree with my learned friend as to acknowledge this third diathesis, it is, 1. Because the diseases either of a sthenic or an asthenic diathesis, remain permanent, and survive the causes that produced them in such a manner, that although they should cease to act, their effect on the diathesis still continues in all itsforce, and even increases in violence: on the contrary, it is the nature of irritative diseases to cease whenever the irritating cause is removed, or, at least, to abate very soon afterwards. 2. Because the diseases of diathesis may be cured by *compensation*, those of a sthenic kind by blood-letting, the asthenic by stimuli, the cause which produced them still existing, while those of irritation are not wholly cured unless by the removal of the irritating cause itself. But although I cannot recognise the features of a diathesis in irritative affections, I have adopted the more useful applications of this theory to pathology and practice; and I have shown, in my treatise on diseases of diathesis, and "those rendered universal by the diffusion of a local excitement," that processes capable of influencing the excitement, and of creating a diathesis, may spring up as the effects of a local action, disturbing, in any way, the well-being of the organization.

Tommasini afterwards alludes to the opinions of Monteggia, Bondioli, and Fanzago, on the subject of irritation, and in notes of some length explains his own ideas by a reference to diseases. Fearing, however, that our readers may have already exhausted their patience, we shall close the present sketch with the idea of life, proposed by Gelmetti, and approved by Tommasini. "It is the result of the action of stimuli applied to the living fibre, and of the re-action of the fibre; and is therefore to be regarded as a state of continued violence that would soon bring about the destruction of the organization, were not its effects moderated by other agents. These are powers that directly depress the excitability, or diminish the intensity of stimulation, and they are named contra-stimulants. When the excitement of the solid is justly balanced by contra-stimulants, health is the effect, the organization being supposed to be perfect. If the organization of any part be injured, or if the quantity of stimulation, or of contra-stimulation be excessive, the one not exactly counterpoising the other, diseases are the consequence; and these are either organic, hypersthenic, or hyposthenick."

MEDICAL AND PHILOSOPHICAL INTELLIGENCE.

Pathology of the Heart.

Corvisart, in his excellent work, "Sur les Maladies et les Lésions Organiques du cœur," &c. &c. was the first who has afforded us any thing like a satisfactory account of the organic derangements to which the heart is liable. The chapters which are occupied with describing the aneurisms of this organ are not the least interesting. The names which he has given of active and passive aneurism, we think decidedly objectionable. In the following notice we shall make use of the term enlargement.

It will be remembered, that the learned author states that enlargement with thickness generally takes place in the left ventricle; most frequently occurs in the young and strong; in those who have a sanguine temperament, who engage in manly exercises, and are subject to violent passions. He mentions the symptoms to be redness of the face, violent beating of the heart, discernible to the eye and hand; throbbing of the carotids, and a strong, hard, and vibrating pulse.

A very interesting paper has appeared in the "Nouveau Journal de Médecine pour Avril" proving, from many facts, confirmed by dissection, that the disease is most apt to occur in the old, feeble and infirm; and is attended with all the signs of debility, with a livid face, with an irregular, small, soft, and easily compressed pulse.

The observations alluded to were made in la Salpétrière, by M. Rostan, and seem well entitled to attention. They induced him to investigate the cause of the disease, and he was led to the following conclusions: that dilatation, with thickening of the parietes of the heart, is not the result of great power or strength of constitution, with activity of healthy action; but is generally caused by that state of the arteries, which is the invariable result of old age; in which they lose their natural elasticity, and become ossified, thick, inorganic tubes. This ossification, as is well known, affects the valves of the heart as well as the vessels in its neighbourhood, and it is from these causes that the heart is gradually called upon for increased action. The obstruction to the current of blood causes the increased thickness of the parieties.

A similar obstruction in the pulmonary system, in the same way, induces the same state of parts in the left ventricle. The author cites the authority of M.M. Bayle and Jadelot in confirmation of this fact.

The conclusions appear equally just and ingenious; and we have little hesitation in declaring our belief, that they account for the many interesting cases which have fallen under the observation of M. Rostan at Salpêtrière. The observations throw much light on one important variety of the disease. Do they account for all the cases which may occur?

The paper itself merits a perusal. See Nouveau Journal de Médecine, &c. Tom. 1. p. 367. (*Quar. Jour. For. Med. and Surg.*)

Use of Mare's Milk in Tænia.

The German physicians have lately remarked beneficial effects from mare's milk in cases of tænia. Dr. Kortum of Stalberg relates the following case in Hufeland's Journal. A lady between thirty and forty years of age had long suffered from tænia, and several attempts to remove it had failed, owing to the patient's great dislike to medicines, which caused every thing of this kind to be instantly rejected by vomiting. Having heard of several individuals that were cured by simply drinking fresh drawn mare's milk morning and evening, she resolved to give it a trial. Having an opportunity in autumn she drank two cups in the evening. Soon afterwards violent pains commenced in her bowels, and continued dreadfully severe during almost the whole night. In the morning however she took one cup more, after which pains in her bowels followed, but much less severe than before. In a few days a long piece of dead, and partly putrid tænia was discharged, and in a short time afterwards another piece with the narrow tapering end of the worm, and with this all the symptoms ceased. This peculiarity of mare's milk is the more remarkable, as that of the cow seems to be agreeable to the worm, and on being drank merely alleviates the symptoms. (*Ibid*)

New Method of preparing Extracts.

Dr. Rehman, of St. Petersburg, in the Saltzburg Med. Literat. Zeitung, No. 22, 1818, communicates the following method of making extracts by Professor Janish of Moscow, and pledges the efficacy of those so prepared. The expressed juice of vegetables is to be put in a dish which is to be placed under the receiver of the air pump, over this is to placed another containing well burnt muriate of lime, and so on several alternate layers. As the air is exhausted, the water evaporates and is immediately re-absorbed by the lime, leaving the dry extract unchanged. The temperature employed in the preparation should not exceed 14 degrees Reaumur.

Professor Janish has made some alterations in the air pump to make it answer his purpose better, among others a contrivance by which the evaporated fluid collects in a recipient surrounded with ice. Extracts thus prepared, rubbed down with twelve parts of water, exhibit the juice of vegetables with all their properties.

Dr. Rehman proposes that Real's method should be conjoined with this; that the fluid extracts obtained by Real's press-machine should be exposed to evaporation as above described. By this he supposes that the dry extracts so obtained would contain all the essential ingredients of the plants used in medicine, and that in the most concentrated form. *(Ibid)*

Preparation of the Extract of Hemlock.

The cases of cancer and other diseases published by Stoerk in his *Libelli tres de Cicuta*, are seldom mentioned at the present day but to be doubted, or even hardily denied. We are much inclined however to believe, that hemlock is possessed of powers much beyond what is generally acknowledged by modern practitioners, and that it would be necessary only to take proper pains in the preparation of the medicine, and then to exhibit it with care to be convinced of this fact.

M. Orfila has been led in the course of his experiments upon poisons to ascertain the comparative effects of the extract of hemlock properly prepared, and of that which is usually sold in the shops. He found that a dram was sufficient to poison a dog if he employed the extract prepared by himself, whereas an ounce, and even ten drams from several of the shops produced no effect whatever.

In preparing his extract, M. Orfila proceeds in the following manner, and these rules are applicable to other extracts of the same kind.

1. The plant must be taken when in full vegetation, and the flowers completely developed. Dried leaves treated with water are perfectly useless.

2. The juice is to be expressed, if the plant be succulent. If it be not succulent, water must be added, and then expression employed. In both cases, expression is to be made without heat.

3. The juice thus obtained is to be evaporated by a gentle heat, in a very broad vessel, and in a water-bath. By using a water-bath, the juice can never be brought to ebullition.

When thus prepared, the extract of hemlock is of a gold-yellow, and slightly reddish colour, whereas in the shops it is usually a black substance which is sold under that name. We are happy to learn that since the publication of M. Orfila's work on Toxicology, a number of the shops in Paris have adopted the above described manner of preparing this extract. It were much to be wished, that a series of accurate experiments upon the effects of hemlock in cases of cancerous and malignant ulcers were made with the extract thus prepared. *(Ibid)*

Pathology of Domestic Animals.

An interesting work has lately been published in Paris upon this subject by M. Dupuy, one of the professors of the Veterinary School of Alfort. It is entitled, *De l'Affection tuberculeuse, vulgairement appellée Morve, Pulmonie, Gourme, Farcin, Fausse Gourme, Pommilière, Phthisie du Singe, du Chat, du Chien, et des Oiseaux domestiques, comparée a l'Affection hydatideuse ou Pourriture du Mouton, du Lapin, du Lièvre, et a la Ladrerie du Cochon.* In the first part of the work, which is historical, M. Dupuy proves that glanders were known in the time of the Greeks, and gives an account of the ridiculous causes to which they attributed the disease. One of the principal facts established by M. Dupuy is, that there are two distinct species of glanders, the one acute and the other chronic. The acute glanders, which is the more rare, appears to be a kind of typhus fever, attended by malignant pustule or gangrenous eschar in the nostrils. It has no other relation to the chronic glanders than through the improper name which some authors have bestowed upon it, and ought to rank among the epidemic and contagious fevers. The chronic glanders insensibly developes itself in the form of tubercles upon the nasal membrane, in the bronchiæ, the different sinuses, the sublingual glands, the parenchyma of the lungs and liver, in the testicles, and even in the subcutaneous cellular substance. These tubercles pass successively through different states similar to schirrus and cancer, produce caries of the bones of the nasal fossæ, and attack a greater or less number of organs before proving mortal. This disease appears to be analogous to the tuberculous phthisis of man. The horses most liable to its attacks are such as are exposed to a northern climate, live in cold and damp situations, are served with damaged fodder, or have suffered from dearth. In certain circumstances, the causes of glanders have acted so promptly, and with such energy upon a great number of horses, that this disease may be regarded as epidemic; yet it would appear that even in these cases it was against the supposed contagion of this disease, that the precautions of the owners and of others were directed. M. Dupuy mentions precise, numerous, and various experiments, which appear to prove that the disease cannot be communicated in a direct manner from one individual to another. He has put a healthy horse along with one affected with the worst symptoms of glanders, they have wrought, drank, eat, and been stabled together for eight months, and yet the healthy horse has remained free from any attack. It is probable that the experiments of the same kind, which for a year past have been carrying on under the inspection of the professors of the school at Alfort, will throw an additional light upon the important question of the contagious nature of glanders The work of M. Dupuy may well serve as a guide to those interested in such inquiries. It clears up many doubts; it raises many. It is written in a spirit conformable to the scientific improvements of the age, and forms a valuable collection of observations intimately connected with pathological anatomy. (*Ibid*)

Asthma.

In the Journal de Médecine, there is an interesting article on the Asthma of old people, by M. Rostan. The object of the author is to overturn the opinion which has been entertained that this is a nervous disease, and to show from numerous dissections, as well as from a consideration of the symptoms, that it arises in every instance from an organic affection of the heart or organs of respiration. Numerous cases are detailed, in all of which, after death, alterations in the structure of the heart and arteries were found, with extensive disease of the lungs and bronchiæ. The morbid appearance most uniformly met with, was thickening of the left ventricle of the heart—which the French call Active Aneurism. The heart itself was frequently found amazingly enlarged in volume, with dilatation of its cavities, ossification of its valves, and of those of the aorta; the aorta itself contracted at its origin, and generally affected with ossifications, some of them of the size of an inch. In some cases active aneurism of the aorta was observed.

The morbid organic alterations in the structure of the lungs in these cases were still more striking. Adhesions between the lungs and pleura were constantly met with, some of them evidently of long standing, and effected by means of patches of organized lymph; effusion of serum into the cavity of the chest; the bronchiæ exhibiting marks of inflammation, and generally filled with mucus; the lungs, in almost every case, gorged with blood, and in many instances divested of their natural appearance, and converted into a substance resembling the liver. In short, every case which was examined at the *Hospice de la Salpétriére* exhibited some, or all of these morbid alterations. The subjects were all above sixty years of age, had suffered from the disease during the greatest part of their life, many from infancy, and had for several years previous to their death been under the inspection of the practitioners at that institution. To these facts which fell under the personal observation of the author, are added the opinions of some late authors, (Corvisart, Baumes, and Bayle,) that diseases of the heart and large vessels have a much greater share in the production of asthma than is generally suspected.

From these observations, M. Rostan concludes that the phenomena of asthma always depend on a morbid alteration in the organs of respiration or circulation, causing a congestion of blood in the lungs; and that the periodical asthma is but the first manifestation of organic affection, which, when farther advanced, produces the habitual form of the disease. We do not think, however, that the author is warranted in adopting the latter part of the conclusion, for it remains yet to be proved that organic diseases always exist in periodical asthma; and till that is established by dissection to be the case, there are many circumstances which favour the opinion that this form of the disease is frequently nervous. It very often makes its first invasion at an age when organic changes of structure rarely occur. The suddenness of its attack and disappearance—the perfect immunity from dyspnœa enjoyed in the intervals, and the uniformity with which particular causes tend to induce or remove the paroxysm, militate against the opinion that the disease is solely attributable to organic affection. The effect of galvanism too, in affording instantaneous relief, even in cases of long standing, would seem to show that permanent organic alterations of structure did not always exist.*

But whether we are to consider the author's opinion as established in its fullest extent or not, his researches must be deemed of no small practical importance. Whether these morbid appearances are to be considered as the cause or the effect of this most distressing complaint, or whether we are to consider them as supervening independently of the disease, their existence certainly indicates a more rigid adherence to the antiphlogistic regimen than is generally observed in asthma, and a freer use of the lancet, which in this disease is by most practitioners used with the utmost caution, and by many entirely proscribed. (*Ibid*).

Sulphureous Fumigation.

THIS method of applying sulphur in a gaseous form to the surface of the body, was first introduced by Dr. Galés of Paris. The result of the experiments and observations made on its employment, by a medical jury appointed for the purpose, was so satisfactory, that by order of the Government it was speedily introduced into all the hospitals of France, and was generally recommended in practice by the physicians of that country.

It consists in applying the vapour arising from ignited sulphur to the naked body of the patient, seated for that purpose in a sort of wooden case, in the upper part of which there is an aperture for the head. To the circumference of this aperture a leather bag is attached, which is fastened round the neck, and thus prevents the fumes of the sulphur from reaching the eyes, nose, or mouth.

The effect of the fumigation is to produce, in the first instance, increased action, and subsequently most profuse perspiration; greater, indeed, than we have ever seen produced by any other means. Hence, it appears to be indicated, 1st, where quick and sudden perspiration is of benefit, and 2dly, where sulphur appears to have a specific action.

The rapid and striking cures performed by means of sulphureous fumigations, soon after their first introduction, particularly in cases of psora, herpes, and some other diseases of the skin, gave rise to such exaggerated statements of their efficacy, as to throw considerable doubts over the whole matter. That this method of applying sulphur is a very powerful agent, can admit, we think, of little doubt; and we are the more disposed to maintain this opinion from what we saw during our residence at Vienna.

The sulphureous fumigating baths were introduced into Germany by Dr. De Carro, of Vienna, whose name is already ennobled in the annals of humanity by the introduction of vaccination to the continent of Asia. We had the honour of being personally acquainted with this enlightened and scientific physician, and from him we derived all the information we possess on this subject. He gave us every facility to inspect the apparatus he had constructed in his own house, which was much neater and more convenient than that of Galés.

It consists of a wooden case, something like a pulpit, in which a grown up person can sit with ease up to the neck. This case is plastered internally. Its floor, formed by a stone of two or three inches in thickness, is raised so far above the ground as to require three steps to get into the case. Underneath are the parts necessary for producing the fumigation. The lowest story is the ash pit, the uppermost the hearth for the sulphur, and the middle contains the fire. The uppermost division communicates freely with the interior of the case, by means of holes bored in the stone floor of the case. A pipe conveys the smoke from the division containing the fire into the chimney. Another pipe passes from the case into the chimney. This may be opened or shut by means of a valve, and after the operation is concluded, it conveys what remains of the sulphureous fumes into the chimney. From this sketch of the apparatus, the method of using it is evident. The patient, perfectly naked, steps into the case, and seats himself on a chair, which may be raised or lowered at pleasure. He places his feet upon a stool. Both the chair and stool are perforated with holes, to admit the free passage of the fumes to all parts of the body. The uppermost board forming the head of the apparatus, is now let down, so that the patient is completely enclosed in the case, with the exception of the head. Provision is made for preventing the fumes acting on the eyes, or entering the mouth or nose, as we have already mentioned. There are various methods of applying the vapour to the face, when the disease has its seat there, the most simple of which is a flexible pipe, which communicates with the sulphureous vapour.

The patient remains in the bath half an hour, or at most an hour. About five minutes before the conclusion of the fumigation, the valve in the sulphur pipe is opened, and thus all unpleasant smell is avoided on opening the door of the case. The patient now goes to bed for an hour or two.

The cases in which we have seen the sulphureous fumigation chiefly used, were cases of chronic rheumatism, psora, lepra, and other cutaneous affections, where sulphur is usually found of advantage. In all of these the benefit derived was very striking, and the shortness of the period necessary for the cure was really astonishing. We saw some cases of old chronic rheumatism, which yielded completely in a few weeks to this remedy. One reason of the great success attending Dr. De Carro's practice, was the judicious selection of cases which he made, whereas many practitioners have employed these fumigations far too indiscriminately, and then wondered at the failures which took place.

The practice of sulphureous fumigation has been made known to the north of Germany in a work by Dr. Karsten of Hanover, under the title of "Ueber die Kraetze, und deren bequemste, schnell-wirkendeste und sicherste Heilart, durch Baden in schwefelhaltigen Daempfen, und dessen vortheilhafte Anwendung zur Behandlung chronischer Krankeiten der Haut und anderer Gebilde, nebst Beschreibung eines hierzu dienlichen Apparats, von Dr. Karsten, mit 2 Kupfern."—Hanover, 1818.

The practice is now generally adopted in most parts of the Continent, and has extended to Russia and Poland.

The same apparatus may be employed for mercurial fumigations, or fumigations with aromatic vegetable substances. (*Ibid*)

Preparation of Opium.

We are informed by an esteemed correspondent that in the following preparation of opium the taste and smell of that medicine are completely concealed, and that it leaves much less of the unpleasant effects of opium on the system than the tincture prepared according to the pharmacopœia. (*Medico Chirurgical Review.*)

R Extr. Glycirrhizæ
———Opii . . aa ℥ss.
Potass. Carb. . ʒj.
Aquæ . . . Oiij.

The whole is to be boiled to Oj. the clear liquor to be poured off, and evaporated to ℥xij. then add spirit of pimento ℥iv. cochineal in fine powder ʒss. It is said to leave no unpleasant effects on the stomach or head.

Obstinate Pervigilium.

A medical gentlemen, between forty and fifty years of age, residing in the West Indies, has been twice affected with states of obstinate insomnolency, the first lasting from six weeks to two months, the last attack continuing nearly three months, without a wink of sleep. These sleepless fits come on without any preceding indisposition, of any kind, the gentleman being in perfect health. For the first week or two he feels little inconvenience;

goes out to parties, and spends the nights in amusements; but af-er this period, a train of nervous symptoms succeeds, attended vith excessive irritability, and derangements in the vascular sys-em and secreting organs. Every means which the medical men f the island could suggest proved entirely useless, and the pervigi-ium went off as suddenly as it came on, without any manifest cause, nd leaving the gentleman in his usual state of health. The second ttack lasted so long that himself and friends became alarmed for he consequences, and after being nearly three months without a noment of sleep, he embarked in the packet for England to obtain nedical advice. The packet put to sea in the evening, and the gentleman fell fast asleep, and continued so twelve hours, since vhich (six or eight months) he has his usual rest, and is in good ealth. This gentleman has been seen by several physicians in ondon, none of whom could discover any symptom of organic or ther disease to account for the two attacks abovementioned He s desirous of obtaining opinions on his case, and of learning vhether any gentleman has met with any thing similar in his prac-ice.

Letter from Mr. Lizars, *containing the Dissection of the Case of Hydrocephalus Chronicus, in which the Ventricles were repeatedly punctured.* (See page 526)

Dear Sir,—Little was I aware when I sent the sheet to press lescriptive of the case of hydrocephalus chronicus, that my little atient was so soon to fall a victim to this terrible malady. Thus ur best endeavours in our profession are too frequently frustra-ed. All my anxiety, my care, and fond anticipations, were in a noment crushed. There is one great consolation, however, that his case affords a prospect of overcoming this desolating disease y operation, for the child did not fall a victim to the puncturing, s the case satisfactorily elucidates.

My last report, in the preceding number of the Journal, men-ions, that the teething was a great source of irritation. On the lay following this, as there appeared evident fluctuation within the rain, I repeated the puncture on the right side, and removed three unces and a half of dark coloured serum. This relieved her for few hours, but afterwards the fits returned, and she seemed to uffer much from her mouth. In the evening I scarified her gums, and recommended the warm bath.

Next morning, after passing a very restless night, she was evi-lently worse: the epileptic fits recurred at shorter and shorter in-ervals. The gums were not so inflamed, but equally swollen. The bowels were sufficiently open. The warm bath was used several times always with temporary alleviation, but the fits gradually exhausted her, and about 3 o'clock P. M. she expired. Fortunately the parents consented to an examination of the head.

Dissection.

After the integuments were dissected back, the bones were found loose. The frontal separated from the parietal, and the former had its two portions removed from each other. The anterior fontanelle was particularly large, extending between the two portions of the frontal bone and downwards on each side of the coronal suture. The posterior fontanelles were scarcely apparent.

The left half of the frontal bone was now removed, when the brain appeared a pellucid bag filled with water; the dura mater adhered so intimately to the bone, that it could not be left to protect the brain. This membrane was redder than usual, and, when torn from the bone, exhibited numerous bleeding points. The brain, or more correctly, the tunica arachnoidea, for the cerebral matter on this left side was obliterated, burst, and about two ounces of serum flowed out. The other half of the frontal bone was next removed, and the cerebral pouch then exposed. On this right side it was thicker, and some convolutions were apparent, but extremely small; the divisions were very shallow. On each side, a circular portion of the pouch was now removed from what was once the anterior lobes, and then were displayed two large cavities filled with serum, almost transparent. The fluid was carefully removed with a syringe, and into whatever side the instrument was inserted, the fluid on the opposite diminished, showing there was a free communication. The fluid amounted to three pounds.

The fluid had obliterated nearly the whole of the cerebrum, leaving merely a shell with the septum lucidum and a septum across the left hemisphere. The tentorium cerebelli was entire, and had tended to protect the cerebellum, which was perfectly sound. The foramen Monroianum was so large as to admit the finger. The foramen commune anterius was equally large, and brought at once into view the infundibulum and the third ventricle, the latter of which might be said still to exist in consequence of the commissura mollis being present. The foramen commune posterius was of equal magnitude.

The walls of this shell or pouch varied in thickness, from a line to the third of an inch. In the thickest parts, it consisted of three parrellel strata: the external was the cineritious matter, of a pale colour, and in some degree diaphanous; the central or intermediate was the medullary substance, nearly of its usual colour and consistence; and the internal stratum, which lined the latter, was of a pale yellow colour, semidiaphanous, extremely tough, and resembled coagulable lymph; every trace of pia mater was gone. At the bottom of the cavities there were numerous red particles apparently the colouring globules of the blood. The walls of the cavity were thinnest at the left side of the coronal suture and left side of the occipital bone. The septum lucidum was remarkably strong, thick, and tough, in consequence of the addition, on each side, of the stratum of coagulable lymph. There was no fifth ventricle. On the left side, or in the left lateral ventricle, there was a considerable septum of cerebral matter, extending across the middle of the cavity; it was a little posterior, but in a line with the coronal suture. It had the print of the trocar upon it, for it must have been this mass that the instrument had entered when I punctured on the 8th and 18th of February. Where I pierced on the other days was about a quarter of an inch in thickness. There was no choroid plexus on either side, and the fornix was so diminished in breadth as merely to assist the septum lucidum.

This, with the other cases on record, shows, that, unless the operation is had recourse to early, there can be little chance of success; for the thickening of the pia mater,—or perhaps it would be more correct to call it a deposition of coagulable lymph, for the septum of cerebral matter in the left cavity was equally coated with it,—must prove an insuperable barrier to any increase of medullary substance.

The case of the patient afflicted with Neuraglia, on whom you witnessed me cut the osseous branch of the inferior maxillary nerve as it enters the ramus of the bone—the branch philosophically named by Soemmerring "*nervous mandibulo labialis*," I have deferred communicating till next quarter, in order to observe whether he continues free of pain. The other day, I found him working in the fields, perfectly well. I trust it will be convenient for you to insert his case in the next number of your valuable Journal; and by so doing, you will much oblige, Dear Sir, your very obedient servant,

JOHN LIZARS.

6, *George Street*, 13*th June*, 1821.

Report of Appearances on dissection of the Body of Napoleon Bounaparte.

On a superficial view, the body appeared very fat, which state was confirmed by the first incision down its centre, where the fat was upwards of one inch and a half over the abdomen. On cutting through the cartilages of the ribs, and exposing the cavity of the thorax, a trifling adhesion of the left pleura was found to the pleura costalis. About three ounces of reddish fluid were contained in the left cavity, and nearly eight ounces in the right. The lungs were quite sound. The pericardium was natural, and contained about an ounce of fluid. The heart was of the natural size, but thickly covered with fat. The auricles and ventricles, exhibited nothing extraordinary, except that the muscular parts appeared rather paler than natural.

Upon opening the abdomen the omentum was found remarkably fat, and on exposing the stomach, that viscus was found the seat of extensive disease. Strong adhesion connected the whole superior surface, particularly about the pyloric extremity in the concave surface of the lobe of the liver; and in separating these, an ulcer, which penetrated the coats of the stomach, was discovered one inch from the pylorus, sufficient to allow the passage of the little finger. The internal surface of the stomach to nearly its whole extent was a mass of cancerous disease or schirrous portion advancing to cancer; this was particularly noticed near the pylorus. The cardiac extremity, for a small space near the termination of the œsophagus was the only part appearing in a healthy state. The stomach was found nearly filled with a large quantity of fluid resembling coffee grounds.

The convex surface of the left lobe of the liver adhered to the diaphragm. With exception to the adhesions occasioned by the disease in the stomach, no unhealthy appearance presented itself in the liver.

The remainder of the abdominal viscera were in a healthy state.

A slight peculiarity in the formation of the left kidney was observed.

(Signed) THOMAS SHORT,
ARCHIBALD ARNOTT,
Longwood, St. Helena, CHARLES MITCHELL,
May 6, 1821. FRANCIS BARTON,
MATTH. LIVINGSTON.

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